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J. W. Livingston

WISCONSIN ARBOR & BIRD DAY ANNUAL

1908

CLARA BYRON — MILWAUKEE ART STUDENTS LEAGUE

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WISCONSIN

ARBOR AND BIRD DAY ANNUAL

1908

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MADISON, WISCONSIN
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1908

ARBOR AND BIRD DAY

A PROCLAMATION BY THE GOVERNOR

By authority of law, and in harmony with established custom, I, J. O. Davidson, Governor of the State of Wisconsin, designate

FRIDAY, MAY EIGHTH,

AS

ARBOR AND BIRD DAY.

It behooves us that the youth of our land shall have knowledge of the value of the trees and the birds, and in order that they may become familiar with their purposes and use and their great value to mankind, Arbor Day has been established. We must teach the children that the flowers, the trees, and the birds have need of their protection and tender care, and this sentiment should be fully cultivated within them.

To assist in attaining this end, it is recommended that Arbor Day be observed as largely as possible by the planting of trees, flowers, and shrubs at our homes, our school grounds, and our parks, which shall serve to increase their beauty, and foster in the minds of the young a love of nature.

In testimony whereof, I have hereunto set my hand and caused the Great Seal of the State of Wisconsin to be affixed. Done at the Capitol, in the City of Madison, this second day of April, A. D. 1908.

By the Governor: *J. O. DAVIDSON.*

J. A. FREAR,
Secretary of State.

FOREWORD.

IN A door-yard of a small village in southern Wisconsin, stands a huge elm of such size and spread of limb that passing strangers stop to admire its rugged strength, grandeur, and simple beauty. Beneath its green roof little children play throughout the long summer days, and glide to and fro in swings hung from its lofty limbs. The birds sing sweet carols from its topmost branches, and the bees and south wind drowsily hum through its leafy boughs. The tired workman takes his nooning beneath its shade, and breathes a benediction upon the one who planted this tree that, like a tent with its sides drawn up, shades him from the burning midday sun. The nurseryman who set out the slender sapling has long since gone to his reward, but the work which he did remains as a testimonial of his love of nature and his interest in mankind. Many are the blessings given the one who planted this tree that not only delighted its owner while living, but now stands a monument to his kindly interest in making the world a more beautiful place in which to live. He who plants a tree not only obtains pleasure and enjoyment for himself, but renders a service to all who are able to apprecite the beauties of nature.

Who can foretell what may be the fruits of the love for trees, birds, and flowers aroused in the pupils of the public schools by appropriate exercises on Arbor Day! Many a child may here receive a suggestion that in after years will lead to the planting of a tree which, like the elm, will in time come to be a source of gratification to himself, his children, and his neighbors. It is not too much for the state to ask that the teachers in the schools of Wisconsin shall devote one day of the school year to inculcating in the minds of the pupils enrolled in the public schools an appreciation for trees, birds, flowers, and all things which tend to make life and its surroundings more beautiful and harmonious.

Arbor Day should be devoted to the transplanting of trees and flowers and in exercises designed to interest children in the joyousness and beauty of nature. Do not permit any exercise foreign to the day to have a place on the program. Wherever possible, plant at least one tree, and decorate the unsightly places on the school grounds with vines gathered from the near-by woods.

As proposed in another article in this Annual, teachers and pupils will be offered an opportunity to vote in the selection of a state flower.

It is earnestly requested that teachers enter into the spirit of this election and endeavor to have the children vote understandingly for the flower of their choice. To this end it would be well to have the children gather and bring to the school the flowers obtainable and from which the choice is likely to be made. The habits, manner of growth, and life of each flower should be discussed to determine which one best typifies the Badger State.

If teachers through the instruction given children preceding Arbor Day, and the exercises in the school house, are able to arouse a more sympathetic and thorough interest on the part of pupils and parents in the care and culture of trees, much will be done toward making secure the forestry movement which is now being attempted by the state and national governments. As the Nation grows older and the states become more densely populated, our timber regions are steadily diminishing. If a supply of timber adequate to our needs is to be kept up and our streams are to have a comparatively uniform flow, not to mention other important considerations, more attention must be given in the public schools to teaching children the necessity of caring for our forests. One half of the school population of the state are enrolled in our district schools, and many of these pupils will continue to live at or near the place where they attend school. Much good can be done in teaching the simple rules necessary for the successful planting of trees and for the preservation of the farm wood-lot.

I trust that the teachers of the state will enter heartily into the spirit and purpose of Arbor Day and that in every school appropriate exercises will be held, to the end that there may be awakened a renewed interest in all questions relating to arboriculture.

To the School Children of the United States:

Arbor Day (which means simply "Tree Day") is now observed in every State in our Union—and mainly in the schools. At various times from January to December, but chiefly in this month of April, you give a day or part of a day to special exercises and perhaps to actual tree planting, in recognition of the importance of trees to us as a Nation, and of what they yield in adornment, comfort, and useful products to the communities in which you live.

It is well that you should celebrate your Arbor Day thoughtfully, for within your lifetime the Nation's need of trees will become serious. We of an older generation can get along with what we have, though with growing hardship; but in your full manhood and womanhood you will want what nature once so bountifully supplied, and man so thoughtlessly destroyed; and because of that want you will reproach us, not for what we have used; but for what we have wasted.

For the Nation as for the man or woman and the boy or girl, the road to success is the right use of what we have and the improvement of present opportunity. If you neglect to prepare yourselves now for the duties and responsibilities which will fall upon you later, if you do not learn the things which you will need to know when your school days are over, you will suffer the consequences. So any Nation which in its youth lives only for the day, reaps without sowing, and consumes without husbanding, must expect the penalty of the prodigal, whose labor could with difficulty find him the bare means of life.

A people without children would face a hopeless future; a country without trees is almost as hopeless; forests which are so used that they can not renew themselves will soon vanish, and with them all their benefits. A true forest is not merely a storehouse full of wood, but, as it were, a factory of wood, and at the same time a reservoir of water. When you help to preserve our forests or to plant new ones you are acting the part of good citizens. The value of forestry deserves, therefore, to be taught in the schools, which aim to make good citizens of you. If your Arbor Day exercises help you to realize what benefits each one of you receives from the forests, and how by your assistance these benefits may continue, they will serve a good end.

THEODORE ROOSEVELT.

The White House,
April 15, 1907.

The above proclamation was received too late for insertion in last year's annual.

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Sincere thanks are due those who have aided in the compilation of the Annual by contributions written especially for its pages. among whom we desire to especially mention Mr. and Mrs. I. N. Mitchell, of Milwaukee, who contribute the series of articles entitled "Birds of Wisconsin," and E. M. Griffith, State Forester, who has been of especial help in preparing the part of the Annual bearing directly on forestry. The helpful suggestions of Mrs. Theodore Kronshage, former Library Clerk. are gratefully acknowledged.

EARLY SPRING.

Once more the Heavenly Power
Makes all things new.
And domes the red-plow'd hills
With loving blue;
The blackbirds have their wills,
The throstles too.

Opens a door in Heaven;
From skies of glass
A Jacob's ladder falls
On greening grass,
And o'er the mountain-walls
Young angels pass.

Before them fleets the shower,
And burst the buds,
And shine the level lands,
And flash the floods;
The stars are from their hands
Flung thro' the woods.

The woods with living airs
How softly fann'd,
Light airs from where the deep,
All down the sand,
Is breathing in his sleep,
Heard by the land.

O follow, leaping blood,
The season's lure!
O heart, look down and up
Serene, secure.
Warm as the crocus cup,
Like snowdrops pure!

Past, Future, glimpse and fade
Thro' some slight spell,
A gleam from yonder vale,
Some far blue fell,
And sympathies, how frail,
In sound and smell.

Till at thy chuckled note,
Thou twinkling bird,
The fairy fancies range,
And, lightly stirr'd,
Ring little bells of change
From word to word.

For now the Heavenly Power
Makes all things new,
And thaws the cold, and fills
The flower with dew;
The blackbirds have their wills,
The poets too.

—*Alfred Tennyson.*

THE GLADNESS OF NATURE.

Is this the time to be cloudy and sad,
When our mother Nature laughs around,
When even the deep blue heavens look glad,
And gladness breathes from the blossoming ground?

There are notes of joy from the hangbird and wren,
And the gossip of swallows through all the sky,
The ground-squirrel gayly chirps by his den,
And the wilding-bee hums merrily by.

And the clouds are at play in the azure space,
And their shadows at play on the bright green vale,
And here they stretch to the frolic chase,
And there they roll on the easy gale.

There's a dance of leaves in that aspen bower,
There's a titter of winds in that beechen tree,
There's a smile on the fruit, and a smile on the flower,
And a laugh from the brook that runs to the sea.

And look at the broad-faced sun, how he smiles
On the dewy earth that smiles in his ray,
On the leaping waters and gay young isles;—
Ay, look, and he'll smile thy gloom away!

William Cullen Bryant.

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WHEN THE GREEN GITS BACK ON THE TREES.

In the spring when the green gits back on the trees,
  And the sun comes out and stays,
And your boots pull on with a right good squeeze
  And you think of your barefoot days;
When you ort to work and you want to not,
  And you and your wife agrees
It's time to spade up your garden lot—
  When the green gits back on the trees.
  Well, work is the least of my idees,
When the green, you know, gits back on the trees.

When the green gits back in the trees and bees
  Is a buzzin' aroun' agin,
In that kind of a "lazy go-as-you-please"
  Old gait that they hum roun' in;
When the groun's all bald where the hay rick stood
  And the crick's riz and the breeze
Coaxing the bloom in the old dogwood,
  And the green gits back in the trees—
  I like, as I say, in such scenes as these,
The time when the green gits back on the trees.

When the whole tail feathers o' winter time
  Is pulled out and gone,
And the sap it thaws and begins to climb,
  And the sweat it starts out on
A feller's forrerd, a-gitten down
  At the old spring on his knees—
I kind o' like jes' a loaferin' aroun'
  When the green gits back in the trees—
  Jes' a-potterin' roun' as I-durn-please,
When the green, you know, gits back on the trees.

—*James Whitcomb Riley.*

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THE SONG OF THE LARK.

The scene is laid in Australia. A crowd of rough miners are gathered on a grass-plot near a little house which is whitewashed and thatched like the humble English homes which they have not seen for years. They have come to listen to the song of a lark.

Like most singers, he kept them waiting a bit. But at last, just at noon, when the mistress of the house had warranted him to sing, the little feathered exile began as it were to tune his pipes. The savage men gathered round the cage that moment, and amidst a dead stillness the bird uttered some very uncertain chirps, but after a while he seemed to revive his memories, and call his ancient cadences back to him one by one.

And then the same sun that had warmed his little heart at home came glowing down on him here, and he gave music back for it more and more, till at last, amidst the breathless silence and the glistening eyes of the rough diggers hanging on his voice, out burst in that distant land his English song.

It swelled his little throat, and gushed from him with thrilling force and plenty; and every time he checked his song to think of its theme,—the green meadows, the quiet-stealing streams, the clover he first soared from, and the spring he loved so well,—a loud sigh from many a rough bosom, many a wild and wicked heart, told how tight the listeners had held their breath to hear him. And when he swelled with song again, and poured with all his soul the green meadows, the quiet brooks, the honey-clover, and the English spring, the rugged mouths opened and so stayed, and the shaggy lips trembled, and more than one tear trickled from fierce, unbridled hearts, down bronzed and rugged cheeks.

Sweet home!

And these shaggy men, full of oaths and strife and cupidity, had once been white-headed boys, and most of them had strolled about the English fields with little sisters and little brothers, and seen the lark rise and heard him sing this very song. The little playmates lay in the churchyard, while they were full of oaths and drink and lusts and remorses, but no note was changed in this immortal song.

And so, for a moment or two, years of vice rolled away like a dark cloud from their memory, and the past shone out in the song-shine; they came back bright as the immortal notes that lighted them,—those faded pictures and those fleeted days; the cottage, the old mother's tears when he left her without one grain of sorrow; the village church and its simple chimes; the clover-field hard by, in which he lay and gamboled while the lark praised God overhead; the chubby playmates; the sweet, sweet hours of youth, and innocence, and home.

—*Charles Reade in "Never Too Late to Mend."*

ROBIN'S COME.

From the elm-tree's topmost bough,
  Hark! the robin's early song!
Telling one and all that now
  Merry spring-time hastes along;
Welcome tidings dost thou bring,
Little harbinger of spring;
        Robin's come!

Of the winter we are weary,
  Weary of the frost and snow,
Longing for the sunshine cheery,
  And the brooklet's gurgling flow;
Gladly then we hear thee sing
The reveille of spring,
        Robin's come!

Ring it out o'er hill and plain,
  Through the garden's lonely bowers,
Till the green leaves dance again,
  Till the air is sweet with flowers!
Wake the cowslips by the rill,
Wake the yellow daffodil!
        Robin's come!

Then as thou wert wont of yore,
  Build thy nest and rear thy young
Close beside our cottage door,
  In the woodbine leaves among;
Hurt or harm thou need'st not fear,
Nothing rude shall venture near.
        Robin's come!

—*William W. Caldwell.*

From "Days and Deeds"; used by permission of the Baker and Taylor Co.

TELEGRAPH PETE.

Young Horned Owl.

The last, lonesome voiced robin had ceased his weird calling for his tardy mate; the raw April winds, that during the day had rudely jostled many a brown leaf from its seat in the white oaks, were being gradually hushed; the twinkling lights in the village homes, were beginning to appear one by one, when I was startled by a loud knocking at my kitchen door. On opening it I recognized one of my school boys, who introduced his errand at once by saying: "D'y'u want an owl?"

"An owl!" I said, at the same time exultingly certain that I should accept any thing which this boy had to offer.

"Yes'ir, an owl. Got it here in a basket. You just ought to seen the way the old ones tried to scare me when I climbed the tree after this little feller. 'Y, they flew right 'round close to me, an' hooted, awful! Honest, I's fraid they'd grab me in the back 'fore I could git down!"

"Will he eat?" I asked as I uncovered a little fuzzy wuzzy, rolly poly, big eyed baby owl.

"Eat?" said the boy laughing, " 'Y, that's all 'e can do, he's a baby!"

"Sure enough," I said, amused by the boy's logic, "Now we will put him into the cellarway for to-night, at least," and the bidding the boy good night he went his way.

Saying nothing to the rest of the family until the next morning, I then proudly, tho cautiously, opened the cellar door, while my two girls and their mother stood in excited wonderment as to what that cellarway contained. Alas for me and the poor scared baby from the wild woods! No sooner was the door opened than we all with one accord fell back—those old owls had fed their children on skunks!

Vainly did I protest that one should not look even a gift owl in the mouth, much less smell his breath; I had to remove the "horrid little beast" to the barn, tho doubtless to his entire satisfaction.

His name? O yes. We called him Telegraph Pete because of his owl habit of snapping his bill, since it reminded one of us of the clicking of the telegraph instrument.

Pete's birthday was probably on some one of the cold days of early March, yet his mother had kept him cosy warm inside of a hollow tree, that grew way off in the deep woods. He looked more like a big eyed puppy poodle dog than like any thing in the bird family, he was so covered with furry down. But as the wing feathers began to grow, there started also on each side of his head, some feathers that looked like horns. They really were outside ears and help to give all of his kind of owls a most delicate sense of hearing. Pete could hear the tiniest scratch of a pin on the outside of the barn door, when he was in the highest loft.

And Pete could talk,—owl language of course, and we learned from him at least four distinct signs of ideas in the owl tongue. The hoot words were used to frighten others, and to startle mice or birds so that he could either hear or see them moving. After a series of hoots he would seem to listen very attentively. But at night when I would imitate this hoot language he became excited and I learned that he took this as a sort of challenge from some other owl. When he was hungry he had a kind of scream or call that grew more plaintive as his hunger became stronger. He expressed anger by snapping his bills together and if hard pressed, he would hiss like a snake.

How did he show fright? Well, he never had any fright to show. He had discretion, caution, and decided cunning but he never showed cowardice in face of a foe.

In two months he was a full grown, great-horned owl. With the long feathers of one wing slightly clipped, he had the freedom of the barn which was closed at night and on cloudy days. By day he was silent and dignified if well fed, and I often took him with me to school on an open perch. There he would sit over the wood box, apparently ignoring the chattering children, who by my advice, always kept at a respectful distance from his claws and bill. For, once, on a dark afternoon, just before school closed, a little lad came rushing into the room shouting: "S-s-s-say, yer owl's got out, a-a-an' they d-d-dasn't ketch 'im!"

I was soon at the scene of the mutiny, and never did Pete inspire in me greater respect than when I beheld him solemnly striding across the garden, half surrounded by a shouting mob of children, yet seemingly unmindful of them. Seeing me approach he stopped and plainly warned me to keep my hands off; but I rushed in where others had feared to tread. The result was that Pete not only landed first but drew first blood. One claw closed on my knee and another pierced my thumb. In fact that owl deliberately walked up my leg, leaving bloody tracks at every step. We went to the barn *together,* where I finally succeeded in parting—him from me. I shall always remember the touching incidents of that painful parting.

Many a dog barked at poor Pete and sometimes threatened to at least take a taste of his feathers, but not a single threat was ever even attempted to be carried out, and my respect for dog sense was not lessened thereby either. No cat ever seemed to have enough curiosity to approach sufficiently near to learn the least thing about him.

When a new neighbor moved in next door and brought a prowling flock of chickens, Pete took a new interest in life. Everybody knows what rude intruding habits a neighbor's hens always have. Now we tried to be kind to those hens by keeping the barn door closed, but a hen really hasn't much more sense of obligation than her shiftless owner and so—well, this is the way it happened once anyway. A lank looking pullet, crammed full of crude curiosity and very little else, came blundering over on to our lot. I quietly opened the barn door and of course the fool hen immediately sauntered in. In five minutes I visited the barn, but to my amazement no hen was visible tho Pete was innocently blinking from a favorite perch in the loft. Finally after close search, in which Pete showed not the least interest, I found poor silly biddy's body under some straw, and her head completely severed lay near by. Not the faintest sound had I heard of the plunge and the death struggle. Why? Because owl tragedies are ever as silent as the twinkling stars beneath which they are enacted. The downy lining of the owl's great wings prevents the swishing sound and their victims are gripped in a vice-like clasp, until—all is still within.

But Pete's habits of eating were the most peculiar. At first we fed him liver and like delicacies, but one Saturday, before he was full grown, the boys brought him a dead black bird. To my astonishment, owing to ignorance at that stage of our acquaintance, Pete took the bird in his mouth, threw up his head and sitting perfectly erect, began to jump up and down, while at each chug of his body the blackbird was literally driven down his throat, feathers, claws, bill, and all. This performance was for a long time afterwards great fun for the boys who brot him rats, mice, gophers, and other choice bits. He was fond of fresh fish, common snakes, and frogs, but no degree of hunger could tempt him to dine upon toads. I never saw him attempt to swallow whole, an animal or piece of meat which was too large for him, tho sometimes the struggle was painfully prolonged. His skill in carving a large fish was quite remarkable and many a person found it very entertaining. His long sharp claws at the end of powerful toes, were fingers, knife, and fork all in one. These toes he could curve sidewise or backwards as he wished, a faculty possessed by but few kinds of birds.

Did he digest the bones, feathers, and claws of the animals which he swallowed? No, the owl stomach digests the meat, but collects all undigestible matter into little pellets which are cast up, and sometimes may be found about an owl's nest. But it is usually easier to find the

pellets from the nest, than it is to find the nest by the pellets; for these castings are not so numerous as some writers would seem to imply.

Pete, like other owls of his day-dreaming habits, had his little annoyances; tho sometimes, I fancy he found them amusing. When he dozed in his box on the lower floor, it often happened that some spy of a blue jay would discover him. Then you would have thot that pandemonium had struck all bird-dom. That officious jay, stuffed to bursting with conceit of that horrible news, would go yelling like mad to all and sundry, "See 'im! See 'im! See 'im!" until all the feathered gossips in the neighborhood were dancing around screaming their peculiar imprecations upon the innocent Pete, who never even so much as winked. In all that year and a half I never saw him attempt to capture one of those silly birds. But how well they knew the bad reputation of Pete's family for murderous deeds done under cover of the night, and how they did enjoy twitting him of it, when he could not defend himself! At any other time a robin would not think of tolerating a blue jay, for a jay's social standing is not the best, but this blue jay seemed now to take on all the airs of a suddenly elevated discoverer of a worse character than himself, and he made the most of his opportunity.

Pete grew to be a fine specimen of his race and he was known to many people, but like many other noted personages, his fame was the cause of his early and not at all dignified demise. He had been apprenticed to a barber of the village, and while "the barber kept on shaving" he also kept an eye on Pete and thus protected him from the too curious, and doubtless, them from him also. Since Pete served as a side attraction to the lounging customers, discussion often turned upon the owl; and one luckless day, an "Oldest inhabitant" remarked that the old saying, "As tough as an owl," was not a proper simile, since an owl's stomach was even less tough than his own. Doubtless lacking a more important issue, the leisurely villagers accepted the wage of wordy battle and the pros and cons waxed rapidly strong on either side. Arguments deep and shallow, discussions loud and long, and consultations from people and books, correspondence columns and what not, soon raised the question to an importance almost as great as Pete's look of wisdom.

Finally, since the barber stood firmly for the soundness of the ancient adage, he vowed he would back his argument with his owl; to which all the village contestants shouted bravo!

The day for trial came. The "Oldest inhabitant" had agreed to bring a piece of meat, half of which was to be given to Pete and the other half of which, he would be willing to eat; and on the result he would submit his case, which was that when it came to strength of digestion, an owl's stomach could not compete with a man's. Before the assembled champions of either side, the wise old settler produced a pound of salt pork, which Pete readily swallowed, having fasted a couple of days to insure the fulfilment of his part of the program. In less than half an hour, the wise, indifferent stare faded from the great eyes of poor old Pete—and all was over!

Innocently he had lived according to the darkness that was allowed him, and innocently he had died, following a martyrlike trust that caused his doom.

CHESTER W. SMITH,
Kilbourn, Wis.

THE OWL.

When cats run home and light is come,
And dew is cold upon the ground,
And the far-off stream is dumb,
And the whirring sail goes round,
And the whirring sail goes round;
Alone and warming his five wits,
The white owl in the belfry sits.

When merry milkmaids click the latch,
And rarely smells the new-mown hay,
And the cock hath sung beneath the thatch
Twice or thrice his roundelay,
Twice or thrice his roundelay;
Alone and warming his five wits,
The white owl in the belfry sits.

—*Alfred Tennyson.*

THE NIGHT WIND.

Have you ever heard the wind go "Yoooo?"
'Tis a pitiful sound to hear!
It seems to chill you through and through
With a strange and speechless fear.
'Tis the voice of the night that broods outside
When folks should be asleep,
And many and many's the time I've cried
To the darkness brooding far and wide
Over the land and the deep:
"Whom do you want, O lonely night,
That you wail the long hours through?"
And the night would say in its ghostly way:
"Yoooooooo!
Yoooooooo!
Yoooooooo!"

My mother told me long ago
(when I was a little lad)
That when the wind went wailing so
Somebody had been bad;
And then, when I was snug in bed,
Whither I had been sent,
With the blankets pulled up round my head,
I'd think of what my mother'd said,
And wonder what boy she meant!
And "who's been bad to-day?" I'd ask
Of the wind that hoarsely blew,
And the voice would say in its meaningful way:
"Yoooooooo!
Yoooooooo!
Yoooooooo!"

That this was true I must allow—
You'll not believe it, though!
Yes, though I'm quite a model now,
I was not always so.
And if you doubt what things I say,
Suppose you make the test;

Suppose, when you've been bad some day
And up to bed are sent away
From mother and the rest—
Suppose you ask, "Who has been bad?"
and then you'll hear what's true;
For the wind will moan in its ruefulest tone:
"Yooooooo!
Yooooooo!
Yooooooo!"

"From 'Love-Songs of childhood'; copyright, 1894, by Eugene Field; published by Charles Scribner's Sons."

THE TWO BIRDS.

There were two birds sat on a stone,
One flew away, and then there was one;
The other flew after, and then there was none,
And so the poor stone was left all alone.

Of these two birds one back again flew,
The other came after, and then there were two;
Said one to the other, "Pray how do you do?"
"Very well, thank you; and, pray, how do you?"

ONCE I SAW A LITTLE BIRD.

Once I saw a little bird
Come hop, hop, hop;
So I cried, "Little bird,
Will you stop, stop, stop?"
And was going to the window
To say, "How do you do?"
But he shook his little tail,
And far away he flew.

A PLAN FOR ARBOR DAY WORK.

The celebration of Arbor Day usually gives rise to two forms of school activity: the preparation of a literary program and the practical work done in improving the school grounds. It is certainly inconsistent, however, to improve the school grounds and leave the school rooms in a dingy and unattractive condition. The practical work connected with Arbor Day should include the tidying and beautifying of the interior of the school house, and the plan suggested is made out with that idea in view.

According to the plan proposed, the teacher, after getting the consent of the School Board, makes, in effect, the following proposition to the school:

"Are you all willing to do, at such times as I shall designate, before Arbor Day, what would be equivalent to about half a day's work in improving the school grounds and school rooms? This is to be done on the plan that the work shall all be completed before Arbor Day. On Arbor Day the program will be given in the forenoon and the school will then be dismissed for the rest of the day. You may spend the day after the Arbor Day exercises are over as you shall see fit."

At this point visions of base-ball, excursions to the woods, fishing, and other sports will make the adoption of the plan by the school a practical certainty.

It now remains for the teacher to plan the work. An inventory should be made of the things which it is desirable to have done. Then the part which each child or group of children is to do should be carefully determined. The teacher then assigns the work, part at a time, so that it may be thoroughly supervised and well done. Evenings after school and Saturdays may be utilized for this work.

The carrying out of this plan may be spread over as much of the school year as the teacher sees fit. At least a month preceding Arbor Day should be used, and it is profitable to begin working the plan even shortly after the opening of the school year in the fall.

It will readily be seen, however, that the plan can not be successfully carried out without the expenditure of considerable thought and energy on the part of the teacher who has the work in charge. Unless the teacher is willing to put into the work the thought and energy necessary to make it a success, it would be better to adhere to the usual plan.

A modification of the plan proposed would consist in leaving a limited amount of planting and other improvement to the school yard for

the forenoon of Arbor Day, so that this work, together with the Arbor Day program, would take up the time of a regular forenoon session. If this modification is used, the work on the school grounds should be done first and then the program given.

By doing the Arbor Day work in the way outlined, instead of having it all done on Arbor Day, it is safe to say that several times as much will be accomplished. The work will be better done and will be done at times when it is most necessary that it should be done. The old complaint that we teach children to plant trees, shrubs, and flowers one day of the year and teach neglect of them the rest of the year will not have a just basis. When Arbor Day comes the program will be a celebration coming *after* things have been accomplished and not *before* as is the case according to the usual plan. Patrons of the school can be invited not only to hear an Arbor Day program, but also to see what has been accomplished in accordance with the true spirit of the day.

CLOVERS.

The clovers have no time to play;
They feed the cows and make the hay,

And trim the lawns and help the bees,
Until the sun sinks through the trees.

And then they lay aside their cares,
And fold their hands to say their prayers,

And drop their tired little heads,
And go to sleep in clover beds.

Then, when the day dawns clear and blue,
They wake, and wash their hands in dew,

And as the sun climbs up the sky,
They hold them up and let them dry,

And then to work the whole long day;
For clovers have no time to play.

—*Helen Leeming Jelliffe.*

By permission of "The Outlook."

STATE TREE.

EARLY OBSERVANCE OF ARBOR DAY IN WISCONSIN, INCLUDING AN ACCOUNT OF A VOTE ON THE "STATE TREE OF WISCONSIN."

Arbor Day was first recognized by legal enactment in Wisconsin in 1889, but no measures were taken to secure its general observance by the schools until 1891. In that year this department first issued a circular urging upon teachers and school officers the observance of the day and giving materials to aid in making interesting and instructive programs. Governor Peck and other friends of education gave the movement an effective aid by the generous offer of $1,000 as a fund to provide a prize for the school in each county which should, as a result of the Arbor Day interest, make the most comparative improvement in its school grounds. There was active competition for the prizes in fifty-eight counties and in many of them the results were a gratifying surprise to teachers and people. In that year too, and also in later years the state horticultural society used its influence and gave its help by issuing circulars and enlisting the aid of its auxiliary societies in exciting the popular sympathy and interest.

In 1892 and again in 1893 this department sent to each school in the state pamphlets giving full and explicit directions by able specialists upon the planting and care of trees and shrubs, upon the preparation and care of lawns and flower beds, and upon the study of Wisconsin trees and birds and flowers.

In 1893 teachers were requested to secure a special preliminary study of our common trees and to have a vote taken to decide which of them should be "the state tree of Wisconsin." This opportunity seemed to enlist the interest of nearly all the children and secured an unwonted study of the characteristics of common trees. Reports of the results of these votes were received from all the county superintendents except Burnett, Douglas, Green Lake, Manitowoc, Monroe, Rock 2nd, Waukesha, and from nearly all the city superintendents. These reports showed that 3,917 schools had cast 123,683 votes upon the question proposed, and that the maple had received 53,211, the oak 34,669, the pine 13,590, the elm 16,028, with the remainder scattering. No report of the number of trees planted was asked from the superintendents except in 1892, when the returns showed that 2,408 districts observed the day and planted 18,343 trees.

—*O. E. Wells in the Biennial School Report of 1894.*

SELECTING A STATE FLOWER.

Some years ago Wisconsin boys and girls were asked to vote upon the choice of a state tree. The results are given in the article "Early Observance of Arbor Day in Wisconsin" on page 21 of this year's Arbor Day Annual. It is now proposed that the school children of Wisconsin shall have an opportunity to select a state flower. It is possible that some expression on this question has previously been taken, but there seems to be no definite knowledge with regard to such action.

It is believed that the accompanying list of well known flowers is large enough for the purpose of making a selection. The privilege is accorded, however, of voting for flowers not on the list; that is, to make "individual nominations." It is proposed that the boys and girls in all the schools, high, graded, parochial, and one-room country schools, shall have an opportunity to express themselves in making the choice by a vote to be taken on Arbor and Bird Day, May 8, 1908. Teachers, parents, and friends who may be present at the Arbor Day exercises should also vote. The college and normal schools of the state are also asked to take an interest in this matter. Should the school for any reason not be in session on Arbor Day, then the vote may be taken on the day preceding Arbor Day; or, if the school is not then in session, on the next day when school is in session after Arbor Day. The result of the balloting must be certified to the office of State Superintendent on or before June 8th, 1908. The vote will, however, be informal. The four flowers which receive the highest number of votes this year are to be voted upon for final choice on Arbor Day, 1909.

Although the ballot on Arbor Day this year is to be an informal one, it is proposed that all teachers shall interest their pupils in making an intelligent choice just as much as they would in making a choice for president or for governor. In order that this may be brought about, it is suggested that general discussions shall be had, and that in cases where two or more boys and girls are in favor of the selection of some one flower and two or more are in favor of some other, debates shall be arranged for in which the contestants shall have an opportunity to champion the beauties and virtues of their particular choice. Interest may be added to the debates by having judges appointed to decide which side makes the best *debate, but not which flower* is to be chosen. Compositions or essays, songs, readings, and declamations should all be made use of as aids in bringing about intelligent results. These will also prove extremely valuable school exercises.

The teachers will report the result of this informal ballot (the voting must be done by ballot) *on the blank provided for this purpose on page 81 of this Annual,* placing after the name of each flower the number of votes cast for that particular flower.

The "returns" for one-room rural schools are then to be sent to this department addressed to C. P. Cary, State Superintendent, Madison, Wis. The reports for graded and high schools should be compiled by the supervising principal. In cities having a city superintendent the reports should be compiled by that official. The supervising principal or city superintendent is then to certify the result to the State Superintendent on the blank provided in this annual. For other schools the reports should be compiled by the person in charge and certified as above indicated.

It is to be hoped that the teachers and pupils of all the schools, public and parochial, in Wisconsin, will enter heartily into the pleasant task of selecting a state flower, and that the plan briefly outlined above may not only be acceptable but also suggestive of other ways in which pupils and parents may be profitably interested.

Charles L. Harper.

"CANDIDATES."

1. Trailing Arbutus
2. Wild Aster
3. Large Blue Flag (Iris versicolor)
4. Wild Columbine
5. Wild Crab Apple Blossom
6. Golden Rod
7. Lady's Slipper
8. American Turk's-cap Lily
9. Liverwort (Hepatica)
10. Marsh Marigold, Cowslip
11. Painted cup (Castilleia coccinea)
12. Pasque Flower
13. Wild Rose
14. Shooting Star
15. Violet
16. Wild Sweet William, Prairie Pink (Phlox)
17. Wake Robin, Trillium
18. White Water Lily

THE YELLOW VIOLET.

When beechen buds begin to swell,
And woods the bluebird's warble know,
The yellow violet's modest bell
Peeps from the last year's leaves below.

* * * * * * *

Oft, in the sunless April day,
Thy early smile has stayed my walk;
But midst the gorgeous blooms of May,
I passed thee on thy humble stalk.

So they who climb to wealth forget
The friends in darker fortunes tried.
I copied them—but I regret
That I should ape the ways of pride.

And when again the genial hour
Awakes the painted tribes of light,
I'll not o'erlook the modest flower
That made the woods of April bright.

—*William Cullen Bryant.*

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THERE'S NOTHING LIKE THE ROSE.

The lily has an air,
And the snow drop a grace,
And the sweet pea a way,
And the heart's-ease a face,—
Yet there's nothing like the rose
When she blows.

—*Christina Rosetti.*

COUNTRY LIFE.

Happy the man who has the town escaped!
To him the whistling trees, the murmuring brooks,
The shining pebbles preach
Virtue's and wisdom's lore.

The whispering grove a holy temple is
To him, where God draws nigher to his soul;
Every verdant sod a shrine,
Whereby he kneels to Heaven.

The singing-birds on him bring slumber down,
The singing-birds awake him, fluting sweet,
When shines the lovely red
Of morning through the trees.

His straw-deck'd thatch, where doves bask in the sun,
And play and hop, invites to sweeter rest
Than golden halls of state
Or beds of down afford.

To him the plumy people sporting chirp,
Chatter, and whistle, on his basket perch,
And from his quiet hand
Pick crumbs, or pease, or grain.

Happy the man who thus hath 'scaped the town!
Him did an angel bless when he was born—
The cradle of the boy
With heavenly flowers strewed.

—*Goethe.*

TALKING IN THEIR SLEEP.

"You think I am dead,"
The apple-tree said,
"Because I have never a leaf to show—
Because I stoop
And my branches droop,
And the dull gray mosses over me grow!
But I'm all alive in trunk and shoot;
The buds of next May
I fold away—
But I pity the withered grass at my root."

"You think I am dead,"
The quick grass said,
"Because I have parted with stem and blade!
But under the ground
I am safe and sound
I'm all alive and ready to shoot,
With the snow's thick blanket over me laid.
Should the spring of the year
Come dancing here—
But I pity the flower without branch or root."

"You think I am dead,"
A soft voice said,
"Because not a branch or root I own?
I never have died,
But close I hide
In a plumy seed that the wind has sown.
Patient I wait through the long winter hours;
You will see me again—
I shall laugh at you then,
Out of the eyes of a hundred flowers."

—*Edith M. Thomas.*

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AN ANTHEM FOR ARBOR DAY.

(Tune: "America".)

Joy for the sturdy trees!
Fanned by each fragrant breeze,
Lovely they stand!
The song birds o'er them trill,
They shade each tinkling rill,
They crowd each swelling hill,
Lowly or grand.

Plant them by stream and way,
Plant where the children play
And toilers rest,
In every verdant vale,
On every sunny swale,
Whether to grow or fail,—
God knoweth best.

Select the strong, the fair,
Plant them, with earnest care—
No toil is vain.
Plant in a fitter place,
Where, like a lovely face,
Let in some sweeter grace,
Change may prove gain.

God will his blessing send—
All things on him depend.
His loving care
Clings to each leaf and flower
Like ivy to its tower.
His presence and his power
Are everywhere.

—*Samuel F. Smith.*

SCHOOL GROUNDS AND BUILDINGS AT LAKE MILLS.

HOW THE WORK OF BEAUTIFYING THE SCHOOL GROUNDS AT LAKE MILLS WAS BEGUN.

A young person in furnishing his home sought the advice of a scholar with reference to furnishing his library. He wished the works of the best authors in literature, in science, in biography, and in all departments, that his library might be complete. What should he buy? The scholar advised him to, by no means, attempt to furnish his empty shelves at once, but to put upon them the books he already possessed; then add to them from time to time books that he wished to read, or books that he had read and loved. Thus would his library become not only a part of his home but a part of himself as well.

OBJECTS TO BE ATTAINED.

It was on this plan that the decorating of the school grounds at Lake Mills was begun, having in mind four objects to be attained:

1st. Making the school grounds beautiful for the sake of beauty.

2nd. Making the school grounds a center of civic pride.

3rd. The stimulating of the pupils and the home makers of the village in the work of properly beautifying home grounds.

4th. Awaking and cultivating interest in the beautiful plants and shrubs growing wild in surrounding fields and woods.

THE PLAN.

In order that the grounds might be truly beautiful it was necessary to have a plan from which to work; so before any thing was done, all available authorities on landscape gardening were studied. Had it been possible to employ a landscape architect to make the plan, this would have been done; but as it was not, the aim was to use the best information at hand, to proceed slowly and carefully that serious mistakes might be avoided.

All authorities agreeing that shrubs, trees, and flowers should be placed upon the borders, this was the plan decided upon; the lawn in front of the high school building, and the playground to be left open, the fences to be covered with vines. The grounds were already well provided with shade trees in front and at the sides. These were large beautiful trees, but being soft maple increased the difficulty of the problem as they are greedy feeders of the soil, leaving little nourishment in their vicinity for other things. There were also a few native oaks and black cherry.

MATERIAL SELECTED.

In walks about the village, the lake, and the woods, note was made of available material, and bitter sweet, American ivy, wild grape, and honeysuckle were located among the vines. Among the shrubs the red dogwood and the sumac were noted, and even the wild gooseberry and sweet elder.

WORK DONE BY CLASSES.

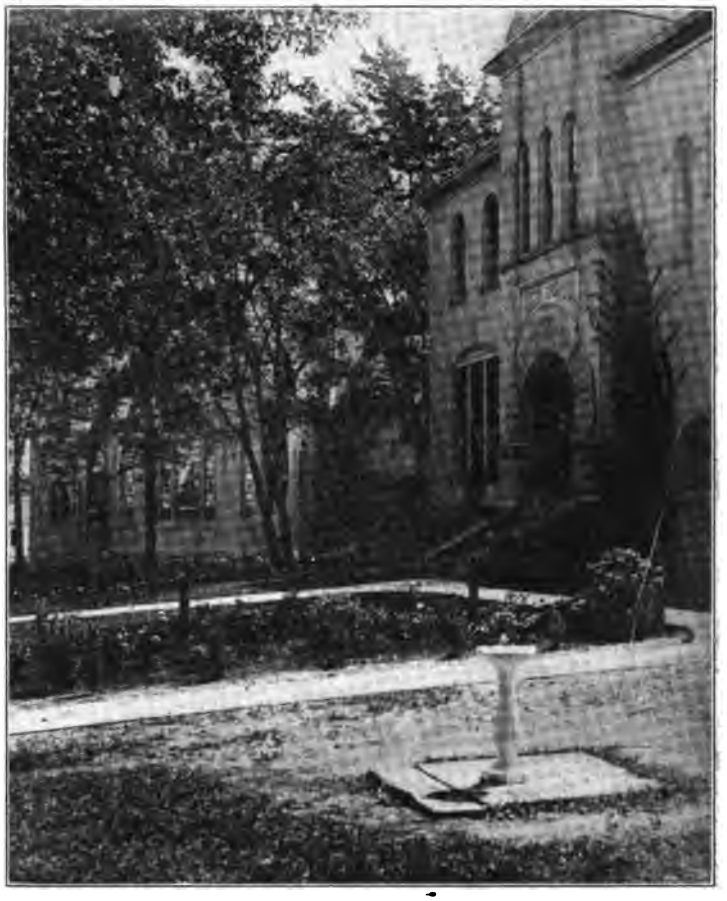
The grounds being fairly well supplied with trees it was not thought best to add many of these, but from the red cedars which grew in abundance about the lake some were selected to be placed in front of an unsightly high board fence, which separated the school grounds from an adjoining barnyard. Permission was obtained from owners of the land on which these wild treasures were growing for their removal, and the work, carefully supervised, given into the hands of various classes.

One class set vines, one set the cedars, another the clump of dogwood, sumac, and sweet elder near the corner of the tight board fence. Interested citizens donated some spirea which was set in two groups, one on each side of the high school entrance. Some of the younger classes set tulips in a carefully prepared bed by the low wire fence which separated the lawn from the playground. Another class put crocus bulbs into the lawn. For some unknown reason the crocuses did not bloom, but the tulips have ever since been the delight of the street in early spring.

Before the winter set in the children of the primary department gathered leaves and mulched the new beds, the vines, and shrubs. So great was their enthusiasm in the work that they had to be stopped lest they should bury them too deeply.

DONATION OF SHRUBS AND PLANTS.

In the following spring the work was continued. A request made through the school for certain shrubs and flowering plants brought immediate response. More spirea was given and set. Lilacs, dahlias, and rudbeckia were furnished in abundance, the attempt being made to screen the board fence by some of the more rapid growing plants while waiting for the slower growing vines. When the beauty of the tulips faded, geraniums, asters, and other plants obtained for the asking, took their places, and on the opposite border of the lawn where it joined the lawn of the Congregational church a row of perennial phlox with border of pansies made the place bright in the later months.



HIGH SCHOOL, LAKE MILLS.

Note the ivy and the spirea referred to in the article by Mr. West.

SUCCESS OF THE PROJECT.

Not all the plants grew, but the project itself grew and was eminently successful. The janitor was a flower-loving German and his co-operation was hearty and his pride in the grounds great, as they blossomed into beauty. The school board and citizens were also interested. The wages of the janitor were increased and he was employed to care for the grounds during the summer vacation as well as during term time, so that the place instead of being neglected with unclipped lawn and playground growing up to weeds became a beauty spot and eventually one of the show places of the village, in which every citizen takes honest pride. Since these small beginnings each season has seen some added improvement.

RESULTS WITH YOUNG PEOPLE.

When the young people come back from the colleges in which they are now studying or from the work in which they are engaged they look with especial pride and pleasure upon the growth of the vines they set; wild grape, American ivy, and bitter sweet. Some recall a pleasant afternoon when they went across the lake and brought back the bitter sweet entwined about a small wild cherry, bringing both tree and vine. One marvels at the growth of the clinging ivy upon the front of the high school building and thinks with gratitude of the woman who at his request gave from her home grounds not only this ivy, but one on the other side of the steps set by the senior class of the following year.

Their interest in their home school is not only increased by the loving work they did for her, but their eyes are wider open to the beauty of plants in wood, in field, and on home grounds.

Knowing something, too, of the methods of planting they will, wherever their lot in life may place them, be a help to the movement for artistic landscapes and a more beautiful America.

Allen B. West,
Milton Junction, Wis.

DANDELIONS.

Upon a showery night and still,
  Without a sound of warning,
A trooper band surprised the hill,
  And held it in the morning.
We were not waked by bugle notes,
  No cheer our dreams invaded,
And yet at dawn their yellow coats
  On the green slopes paraded.

We careless folk the deed forgot;
  Till one day, idly walking,
We marked upon the self-same spot
  A crowd of vet'rans talking,
They shook their trembling heads and gray
  With pride and noiseless laughter;
When, well-a-day! they blew away,
  And ne'er were heard of after!

—*Helen Gray Cone.*

MRS. WASP AND MRS. BEE.

Said Mrs. Wasp to Mrs. Bee:
"Will you a favor do for me?
There's something I can't understand;
  Please, ma'am, explain it to me.

"Why do men build you a house,
  And coax you to go in it,
While me, your cousin, they'll not let
  Stay near them for a minute?
"I have a sting, I do confess,
  And should not like to lose it;
But so you have, and when you're vexed
  I'm very sure you use it."

"Well," said the Bee, "to you, no doubt,
  It does seem rather funny;
But people soon forget the stings
  Of those who give them honey."

—*American Bee Journal.*

VIOLETS.

Violets, violets, sweet March violets,
Sure as March comes, they'll come too,
First the white and then the blue—
Pretty violets!

White, with just a pinky dye,
Blue as little baby's eye,—
So like violets.

Though the rough wind shakes the house,
Knocks about the budding boughs,
There are violets.

Though the passing snow-storms come,
And the frozen birds sit dumb,
Up spring violets.

One by one among the grass,
Saying "Pluck me!" as we pass,—
Scented violets.

By and by there'll be so many,
We'll pluck dozens nor miss any:
Sweet, sweet violets!

Children, when you go to play,
Look beneath the hedge to-day:—
Mamma likes violets.

—*Dinah Maria Mulock Craik.*

By permission of Charles E. Merrill Co.

THE TREE.

The tree's early leaf-buds were bursting their brown,
"Shall I take them away?" said the frost, sweeping down.
"No; leave them alone
Till the blossoms have grown,"
Prayed the tree, while he trembled from rootlet to crown.

The tree bore his blossoms, and all the birds sung,
"Shall I take them away?" said the wind, as he swung.
"No; leave them alone
Till the berries have grown,"
Said the tree, while his leaflets quivering hung.

The tree bore his fruit in the midsummer glow.
Said the child, "May I gather thy berries now?"
"Yes; all thou canst see;
Take them; all are for thee,"
Said the tree, while he bent down his laden boughs low.

—*Björnstjerne Björnson.*

BLESSING FOR THE TREE PLANTER.

O painter of the fruits and flowers!
We thank Thee for thy wise design,
Whereby these human hands of ours
In nature's garden work with Thine.

* * * * * *

Give fools their gold and knaves their power;
Let fortune's bubbles rise and fall;
Who sows a field or trains a flower
Or plants a tree is more than all.

For he who blesses most is blest;
And God and man shall own his worth
Who toils to leave as his bequest
An added beauty to the earth.

And, soon or late, to all who sow,
The time of harvest shall be given;
The flower shall bloom, the fruit shall grow,
If not on earth, at last in heaven.

—*Whittier.*

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YOUNG WHITE PINE FOREST IN MASSACHUSETTS.

The trees were planted fifteen years ago. Would it not be a profitable investment to grow this kind of a crop on those areas of Wisconsin which are unfit for agricultural purposes?

TREE PLANTING.

With Descriptions of and Directions for Growing for the Purpose of Reforestation Five of the Most Important Trees of Wisconsin.

By E. M. GRIFFITH, STATE FORESTER.

The great importance of planting trees has long been recognized in this country, or we should not have the celebration of Arbor Day every year in so many of the states. The people of this state are especially interested in having trees planted and the legislature of 1907 passed a law allowing any owner of land to hold forty acres or less free from taxation for thirty years, provided he would plant the land with not less than twelve hundred trees to the acre and keep them in a healthy, growing condition. Ten years after the trees have been planted half of them may be cut. Lumber is becoming more and more valuable all the time, and it is hoped that many people will take advantage of this law and plant many tracts with timber trees.

A great many kinds of trees will do well in this state. Five of the best native trees are the white pine, Norway pine, white spruce, hemlock and basswood. The young plants may be raised from seed or purchased from a nurseryman or even taken up in the woods.

If only a few hundred plants are desired, it is usually cheaper and easier to buy them from a nurseryman than to raise them; but if several thousand are needed, it will be cheaper to raise them from seed. In many localities, the seedlings can be transplanted from wild land.

Forest planting must be done by simple and cheap methods. It is not necessary to plow and harrow the planting site but it is best if the land to be planted has been used for field crops. Preparation and cultivation of the soil improve the early growth of the trees.

Trees should be planted with the least possible exposure of the roots, as the rootlets of the plants will dry out if exposed to the air for even a short time. Conifers are particularly sensitive and require more care than broad-leaf trees. The best time to plant is in the early spring before growth has begun, as soon as possible after the frost is out of the ground, and cool, damp days are much better than sunny, windy weather.

As a rule, seedlings from one to three years old, which are from four to seven inches high, are best for planting. The great mistake that most people make in collecting wild seedlings is to take up large plants that have their root systems so well developed that they can-

not be removed from the ground without injury and the plants do not thrive after being transplanted.

If wild seedlings are growing in a fine, deep leaf mould, they can be drawn from the ground very easily; if they are growing in sod, the ground should be loosened around each plant, which can then be lifted and gently shaken free of the earth that adheres to the roots. The roots should then be plunged into a pail of "puddle," a mixture of earth and water about as thick as cream, which keeps the rootlets from drying out through exposure to the air; or, if many plants are to be taken and to a considerable distance, the roots should be dipped in water and the plants bound together in bunches of a hundred or more, and each bunch be kept moist at the roots by covering of wet burlap or moss or fresh earth. Seedlings that are received from a nurseryman will come packed in a similar way, and the roots of these, also, should immediately be plunged into a pail of puddle.

If the plants are to be set in prepared ground, a furrow can be plowed for them; if in unprepared ground, holes should be made with a mattock. The depth and width of the holes or furrows should be made according to the character and size of the root system of the plant and the plants should be placed from two to three inches deeper than they originally stood. The distance apart of the plants will depend on the species planted and the object to be attained. When the plant has been set, it is of the greatest importance to press the earth firmly about the roots, so that all air spaces are filled, but it should not be packed so hard that water will not readily soak in. Two inches of soil at the top should be left very loose to retain moisture, and in dry localities it is well to leave a slight depression around the collar of the plant to collect any moisture that may fall.

White Pine.

White pine is the most valuable timber tree in Wisconsin and is also a good species for ornamental planting in parks and yards. If land is protected from fire, white pine will extend itself rapidly by natural seeding and it can be recommended for reforesting burned and cut-over areas generally throughout its economic planting range.

HABITS AND GROWTH.

White pine grows naturally and best in a cool climate on a fresh, light, deep, and sandy soil with a porous subsoil. It readily adapts itself to both dry and moist soils, for it is found on the poorest and dryest sand and on steep, rocky slopes, and also on moist clay flats and river bottoms, provided the latter are not continuously wet. It

is capable of disputing possession with hardwoods, even on fresh, medium-heavy clay and loam soils.

White pine can endure considerable shade for a number of years, but as it becomes older it requires more and more light for its development, and after it is 40 or 50 years old the crown demands full sunlight. On this account white pine is best grown in mixture with slower growing hardwoods or other conifers which will not overtop or shade it from above.

In artificial plantations or on abandoned farms which have been reforested naturally, white pine usually grows much faster than in the forest, especially during the early years. Records of plantations in New England show that the average growth of the larger trees ranges from one-fourth to one-third of an inch in diameter annually. It is possible in the eastern portion of the United States to produce saw timber in from sixty to seventy years. Smaller trees suitable for box boards and match blocks can be produced in thirty or forty years.

Owing to the thinness of its bark, young white pine is very susceptible to injury by fire, which must be most carefully excluded from plantations; but between the fifth and twentieth years the greatest cause of injury to the white pine is a weevil which in the grub stage mines in the terminal shoot and causes a crooked stem. Repeated attacks make the tree unmerchantable.

ECONOMIC USES.

The wood of the white pine is soft, light, straight grained, and easily worked, and will not warp. It was formerly used to a great extent for general construction, but on account of its growing scarcity and high price it has been largely superseded for this purpose by other woods. The better grades of this lumber are still used in naval construction—for decking, interior finishing, and spars.

Second-growth white pine is used principally for low-grade lumber, match blocks, box boards, wooden ware, and straight-staved cooperage. Where a demand for this material exists, white pine on non-agricultural lands will prove of economic value. Wherever there is a market for small material, white pine will prove the most profitable conifer that can be grown on poor soils.

Within its range of economic planting white pine forms a very satisfactory windbreak or shelterbelt.

METHODS OF PROPAGATION.

White pine reproduces only from seed. Plantations should be started from nursery-grown stock rather than from seed, which usually gives unsatisfactory results.

If the trees are to be grown in a home nursery, the seed may be purchased, but a large saving may be made by collecting it in the neighborhood, if this can be done. Cones should be gathered during the latter part of August or in September, before they begin to open. They may be picked from standing trees, or from felled trees if lumbering operations are being conducted nearby. When gathered, the cones should be spread out on a sheet or floor, where they will be exposed to the sun, yet protected from wind and rain. Within a week they will open and allow the seed to drop out. A thorough stirring will separate the seed; after which the cones may be raked away. One bushel of cones will yield from one-half a pound to 1 pound of clean seed, which will average from 29,000 to 30,000 seeds per pound. Seeds may be stored over winter by placing in small sacks and hanging the sacks in a cold, dry place.

The most successful method of raising seedlings is by sowing the seed in nursery beds. Seed beds should be composed of fine, loose, fairly fertile soil, moderately moist but always well drained. The soil must not be too rich; otherwise the seedlings will suffer when transplanted to the less favorable conditions of the permanent site.

A convenient size for seed beds is 4 by 12 feet, with a path about 18 inches wide between the beds, so that the plants can be weeded and cared for with ease. The seed should be sown in drills, 4 to 6 inches apart, and lightly covered with fine earth. Sowing should not begin until the ground is warm enough to cause rapid germination. Seed may be safely sown at the time garden vegetables are planted. After a seed bed is sown the surface should be "firmed" with a board or light roller.

The plants will begin to appear in from three to five weeks. Like other conifers, they will require partial shade during the first season, but subsequently can endure full sunlight, especially in New England. A shade frame of lath supported 18 inches above the bed will serve the purpose.

One pound of white-pine seed is sufficient to sow 500 linear feet of seed drill, or about 200 square feet of seed beds, with drills 6 inches apart. Even with proper care some seed may fail to germinate promptly, but about 10,000 plants may be expected for every pound of fertile seed sown. White-pine seed retains its vitality for several years, and when kept in cold, dry storage a fair percentage has been known to germinate after five years. Fresh seed, however, is always to be preferred.

Two years after sowing, the seedlings should be transplanted in the spring from the seed beds to nursery rows, in order to develop a good, fibrous root system. They may be set out 3 inches apart, in rows

from 12 to 18 inches apart. The roots should be set slightly deeper than they were before. The best method of transplanting is to open a shallow trench of the proper depth with a spade and set the plants by hand, carefully covering the roots of each plant with fine soil and gently firming it. Transplants, if thoroughly cultivated and weeded, will be ready for final planting at the beginning of the fourth season. At this age they should be 6 to 9 inches in height and have a well-developed system of fibrous roots.

PLANTING.

White-pine seedlings should be planted on a permanent site in the early spring when the ground is dry enough to work. In most cases the site will not need preparation previous to planting.

NORWAY PINE (*Pinus resinosa*).

Norway pine is second only to white pine in its value as a timber tree.

FORM AND SIZE.

The red, or Norway, pine generally attains a height of between 70 and 90 feet, and a diameter of 2 or rarely 3 feet. When grown in the open, the tree is relatively short, and branched close to the ground. In the forest the stem is commonly clear for 40 to 60 feet, and the crown is short and open, but broad-spreading.

The distinguishing features of red pine are its thin, scaly, reddish-brown bark, and its slender and flexible leaves 5 to 6 inches long in clusters of two.

RANGE.

The natural range of the red pine is along the northern border of the United States as far west as Minnesota, and southward through the Northern states to eastern Massachusetts, the mountains of Pennsylvania and northeastern Ohio. It reaches its best development in the northern portion of Michigan, Wisconsin, and Minnesota.

The red pine is adapted for planting throughout most of the northeastern part of the United States. It will not do well where droughts are frequent or severe.

SILVICAL QUALITIES.

The red pine grows best on sandy loam soil, well drained and of moderate fertility, but it also thrives on poor sands when other condi-

tions are favorable. The tree is very intolerant of shade at all ages and therefore suitable for pure plantations only, or for mixtures in which the other species are distinctly slower growing. Its rate of growth is fairly rapid. Measurements made in several New England plantations show an average height of 35 feet and diameter of 6 inches at 30 years of age.

Red pine suffers little from insects or disease. It is moderately fire-resistant and quite free from destructive fungi. When young, the tree is sometimes injured by a white grub which feeds on the tender roots, but the mature tree has few enemies.

ECONOMIC USES.

The wood is somewhat like white pine, though a little heavier, harder, and stronger. It is only moderately durable. It is distinctly valuable for all kinds of house lumber, and when chemically treated makes good posts and ties. In most of its qualities it compares with the shortleaf pine of the South, and with western yellow pine.

PROPAGATION.

Red pine grows only from seed. While the trees do not produce large quantities of seed, and seed years occur at intervals of from two to four years, there is usually a sufficient natural reproduction wherever there are old trees.

The seeds ripen in the fall of the second year after the flowers appear, and may then be gathered and kept over winter in any cool, dry place.

The seeds should be planted in the spring in well-prepared beds, either in drills about 5 inches apart extending across the beds, or broadcast, and covered lightly with earth well pulverized and pressed down firmly. When the seedlings are two years old they may be transplanted to nursery rows, or set in their permanent places in the plantation.

It is desirable to keep the nursery beds moderately moist, for if too dry the plants will either die or send their roots so deep in search of water that they will be difficult to transplant.

One pound of seed contains about 75,000 grains, and, under average conditions, will plant about 400 lineal feet in drills, or 100 square feet broadcast.

The young seedling develops a strong taproot, but later produces several stout laterals which firmly anchor the mature tree, unless the soil be very shallow.

PLANTING.

For planting red pine it is best to use seedlings two or three years old which have been raised in nursery beds.

The young trees should be set out in the spring, late in April or early

in May. They may be planted in furrows or in holes made with a spade, mattock, or planting bar. As a rule, the proper spacing is 4 feet each way, although this will vary in different localities.

It is usually advisable to plant red pine pure, though on good soil sugar maple, beech, or elm might be mixed with it. Any associate must be of slower growth than the red pine, or the latter will be overtopped and suppressed. Mixture with white pine has generally proved satisfactory.

CULTIVATION AND CARE.

If red pine is planted on cut-over lands, more rapid-growing species such as jack pine, aspen, and birch must be prevented from choking it out. No cultivation is needed, and the protection necessary is from fire and grazing.

The red pine, being intolerant of shade, very readily clears itself of its lower branches when close-grown, and never requires pruning.

HEMLOCK (*Tsuga Canadensis*).

Hemlock ranks third among the important trees of Wisconsin. It is valuable not only for lumber, but also as material for paper pulp, and the bark is of value in the tanning of hides. There are a great many paper and pulp mills in this state and the demand for hemlock is very great.

FORM AND SIZE.

A conical evergreen tree which is usually from sixty to seventy feet in height with a diameter of from sixteen to twenty-four inches, and a maximum height of one hundred feet and a diameter of four feet. The hemlock is one of the most beautiful cone bearing trees.

RANGE.

It is found from Nova Scotia to Minnesota, Michigan, and Wisconsin, extending southward to Georgia and Alabama, and reaching its largest size on the mountains of North Carolina and Tennessee.

HABITS AND GROWTH.

It does well on steep slopes and rocky banks but reaches its best development along streams and in low, moist situations. Its reproductive power is usually very poor but in Wisconsin the young growth is fairly abundant where fires have been kept out. The growth is slow but it

is able to withstand very dense shade. Its root system is extensive, but shallow, and the old trees are liable to die when the forest is opened up too rapidly.

ECONOMIC USES.

Hemlock forms a large percentage of the pulpwood which is used in making paper in Wisconsin, and the amount of spruce in the state is so small that hemlock in the near future must furnish the bulk of the raw material for the paper mills. The astringent inner bark forms the bulk of the material used in tanning leather and is constantly becoming more valuable, as the hemlock forests in the east are exhausted.

METHODS OF PROPAGATION.

The seeds of the hemlock, although they are produced in great abundance, do not germinate freely in open situations or on ground which has recently been burned over, and the young seedlings grow slowly, plants under favorable conditions being not more than three or four inches high at the end of the fourth season. Seeding will not be found satisfactory and young plants should either be purchased from some reliable nursery or grown from seed in the home nursery. The nursery should be located on fertile, fairly moist soil, and the plants must be protected from drying out. They should be transplanted in the nursery when two years old.

PLANTING.

When four years old, the trees should be planted, being careful to space them not more than four feet apart each way, so that they will afford shade to each other and grow up with long, clean stems, free from limbs. Its ability to withstand very dense shade makes it particularly adaptable for planting in mixture with other species, notably the spruces and hardwoods. After planting, no cultivation is required.

BASSWOOD (*Tilia Americana*).

Basswood is one of the most valuable hardwoods in the state and is of fairly rapid growth.

FORM AND SIZE.

The basswood is a forest tree which often attains a height of 70 to 80 feet, and a diameter of 2 feet. Under favorable conditions it may be considerably larger. When grown free the tree bears a large, compact crown, which makes a dense shade; in the forest it has a straight

stem with but few branches, which are closely clustered at the top. The inner bark (bast), from which the tree gets its name, is fibrous and tough.

SILVICAL QUALITIES.

The basswood is best suited to deep, rich, river bottom soils, and to cool situations. While it will maintain itself on poorer uplands, it is recommended for planting only where the soil is moist and well drained and where droughts are infrequent. It is, in general, a hardy tree. It is moderately tolerant of shade, and the seedlings require some protection from the hot sun. In dry situations it is subject to injury from the sun's heat.

The rate of growth is fairly rapid during early age, being about the same as that of red oak and Norway maple. After attaining maturity the trunk frequently becomes hollow.

The basswood is sometimes attacked by insects, which denude it of leaves or bore into the bark, but serious damage is not frequent. The European species are much more liable to insect injury than the native basswood, and are much less desirable trees generally.

ECONOMIC USES.

The light brown wood is soft, straight-grained, and easily worked, but not durable. It is often sold under the name of whitewood, and is largely used for house lumber, woodenware, carriage bodies, panel works, trunks, and paper pulp.

Its large crown and dense foliage render it desirable for planting along roadsides and about the home, and also for low shelterbelts throughout the greater part of its range. Its flowers, which yield great quantities of fine honey, lend it great value for bee keepers.

PROPAGATION.

The basswood reproduces freely both by seed and by sprout. The seed ripen in September or early October, and may easily be collected while attached to their large wings or bracts. They should be separated from the wings and planted at once in nursery beds, as alternate freezing and thawing during the winter rots and loosens the seed coat and causes early germination. If it is impracticable to plant in the fall, they may be kept over winter in a cool, dry place between layers of sand.

The basswood is one of the most prolific among our native trees in sprouts from the stumps, and hence this method of renewing an old stand is recommended. To secure vigorous sprouts the trees should be felled between November and March and the stumps cut low.

Sprouts then start close to the ground, where they can soon develop a root system of their own and become self-supporting. All but two or three of the sprouts should be removed at the end of the first season. Under favorable conditions a sprout grows only about a foot the first year.

The basswood seedling develops a single stout root, but this is soon replaced by a number of lateral roots which give the tree a strong hold upon the ground.

PLANTING.

In planting the basswood it is best to use one-year-old seedlings, which should be set out as soon as the frost is out of the ground and before the leaves unfold. As a rule it is advisable to space the trees about 5 feet apart each way.

Basswood does well when planted in pure stands, but it is also of value in mixture with white or red pine (on good soil), or with white elm, white oak, red oak, maple, or hickories.

CARE AFTER PLANTING.

In most situations to which basswood is adapted, little cultivation is needed, since the heavy crowns and rapid growth of the young trees will soon form dense cover, which will exclude grass and weeds and furnish the proper soil conditions. Where the undergrowth is very rank, however, it is necessary to clear out the weeds in order to give the trees growing space.

Cattle have an especial fondness for basswood boughs and foliage, so that the young trees must be carefully protectel from them.

The plantation should be carefully guarded from fire, and should be allowed to assume the character of a forest as soon as it can.

WHITE SPRUCE (*Picea alba*).

White spruce is a valuable tree for the manufacture of pulp and the young trees are ornamental on lawns and in parks.

FORM AND SIZE.

The white spruce develops a straight, conical, undivided trunk with small, slender branches. Forest-grown trees are usually from sixty to seventy feet in height with a maximum height of one hundred and fifty and a diameter of three feet.

RANGE.

This species is indigenous to North America and is found from Newfoundland to Hudson bay and Alaska, southward to Maine, New York and Michigan, west to South Dakota, Montana and British Columbia.

HABITS AND GROWTH.

The white spruce does not demand a rich soil, though it grows more rapidly on the better soils. It does well in a fresh, shallow, moderately porous soil, whether fertile or not, and will thrive with considerable moisture. It should not be grown on a very dry, sandy soil and will not stand severe droughts. The rate of growth is slow until a diameter of about five inches is attained, but after that there is a rapid rise in both diameter and height growth. The root system is rather shallow and, therefore, the tree is liable to be thrown by very heavy winds when grown in the open. The foliage of the white spruce is rich and beautiful but the odor of the crushed needles is rather unpleasant. No other spruce grows more luxuriantly or is more ornamental.

ECONOMIC USES.

White spruce is one of the most valuable trees in the United States. Its wood is extremely useful for building purposes, and as the raw material used in the manufacture of newspaper, it is without a rival. Wisconsin through its splendid water powers has many paper mills and, therefore, the growing of white or red spruce should yield a handsome return, as there will always be a market for such choice pulpwood.

METHOD OF PROPAGATION.

White spruce produces some seed almost every year but heavy seeding occurs once in about eight years. Where only a small amount of planting is to be done, the best plan is to purchase two to three year old seedlings from some reliable nursery. When it is desired to establish large plantations, reliable seed should be purchased and the seedlings grown in a home nursery. The nursery should be located on fertile, well drained soil, preferably a sandy loam, and the beds should be carefully prepared by working the ground thoroughly.

PLANTING.

When the plants are grown in a home nursery, they may be set out when two years old but it is better to transplant them at this age into nursery rows, as transplanted stock is always more hardy and vigorous. Plant at three years in the permanent site, spacing the trees from four to six feet apart each way. After planting, no cultivation of any sort is required. White spruce is extremely tolerant of shade and, therefore, is well adapted for planting with other species, especially hardwoods, or to fill in blanks in a forest.

REFORESTATION IN MASSACHUSETTS.

Ought not this kind of work to be going on in Wisconsin?

NUMBER OF TREES PLANTED ON THE SCHOOL GROUNDS OF WISCONSIN IN 1907.

Reports received from County Superintendents by the Department of Education show that in 1907, 6,248 schools of the state observed Arbor Day and that 13,598 trees were planted.

Following is given the number of trees planted by each of the four counties standing highest on the list: Manitowoc Co., 516; Dane Co., 470; Dodge Co., 450; Shawano Co., 397.

FORESTRY BULLETINS.

The publications listed below are of special value to the people of the State of Wisconsin. Copies may be obtained free of charge by addressing The Forester, United States Department of Agriculture, Washington, D. C. The list is additional to the one printed in last year's Arbor Day annual.

Circular 35: Forest Preservation and National Prosperity.

Circular 36: (Fourth Edition) The Forest Service: What it is and how it deals with Forest Problems.

Circular 96: Arbor Day.

Extract 329: From the Year book of the Department of Agriculture (1903). The Relation of Forests to Stream Flow.

Circular 140: What Forestry has done. (Status of Forestry in various foreign countries.)

Circulars 54–77, 82–95, and 106. Forest Planting leaflets.

These leaflets, besides giving information in regard to planting, are excellent aids to studies of the different kinds of trees.

THE USE OF THE NATIONAL FORESTS: A bulletin of interest to the general reader. It is neatly bound.

Circular 100: Suggestions for Forest Planting in the North-eastern and Lake States.

Farmers' Bulletin 173: A primer of Forestry. A Reprint of Bulletin 24, Part 1.

Circular 97: The Timber Supply of the United States.

Circular 130: Forestry in the Public Schools. Forest Service. Outlines are submitted indicating how elementary forestry may be taught in connection with other school branches. The bulletins and books most useful in this work are also listed.

Progress of Forestry in 1906: Reprint.

Circular 117: Preservative treatment of Fence Posts.

Circular 129: The drain Upon the Forests.

LIST OF NOTED TREES.

The Elm Tree at Philadelphia under which William Penn made his famous treaty with nineteen tribes of barbarians.

The Charter Oak at Hartford which preserved the written guarantee of the liberties of the Colony of Connecticut.

The wide-spreading Oak tree of Flushing, Long Island, under which George Fox, the founder of the Society of Friends, prached.

The lofty Cypress tree in the Dismal Swamp under which Washington reposed one night in his young manhood.

The huge French Apple tree near Ft. Wayne, Ind., where Little Turtle, the great Miami chief, gathered his warriors.

The Elm tree at Cambridge in the shade of which Washington first took command of the Continental army, on a hot summer's day.

The Tulip tree on King's Mountain battlefield in South Carolina on which ten bloodthirsty Tories were hanged at one time.

The tall Pine tree at Ft. Edward, N. Y., under which the beautiful Jane McCrea was slain.

The magnificent Black Walnut tree near Haverstraw on the Hudson at which General Wayne mustered his forces at midnight, preparatory to his gallant and successful attack on Stony Point.

The grand Magnolia tree near Charleston, S. C., under which General Lincoln held a council of war previous to surrendering the city.

The great Pecan tree at Villere's plantation, below New Orleans, under which a portion of the remains of General Packenham was buried.

The Pear trees planted, respectively, by Governor Endicott, of Massachusetts, and Governor Stuyvesant, of New York, more than two hundred years ago.

The Freedman's Oak, or Emancipation Oak, Hampton Institute, Hampton, Virginia, under which the slaves of this region first heard read President Lincoln's Emancipation Proclamation.

The Eliot Oak of Newton, Mass., under which the apostle, John Eliot, taught the Indians Christianity.

The old Liberty Elm of Boston planted and dedicated by a schoolmaster to the independence of the colonies, and the rallying point for patriots before, during and after the Revoluntionary War.

The Burgoyne Elm at Albany, N. Y., planted the day Burgoyne was brought there a prisoner.

The Ash and Tulip trees planted at Mt. Vernon by Washington.

The Elm tree planted by General Grant on the Capitol Grounds at Washington.

Sequoia—Palo Alto, California.

The Cary Tree planted by Alice and Phœbe Cary in 1832, a large and beautiful Sycamore seen from the Hamilton tunrpike, between College Hill and Mt. Pleasant, Hamilton County, Ohio.

—*American Civic Association of Philadelphia.*

TREES OF THE FRAGRANT FOREST.

(For seven children. As they take their places upon the stage, those in seats recite the first stanza.)

Trees of the fragrant forest,
With leaves of green unfurled,
Through summer's heat, through winter's cold,
What do you do for our world?

First—
Our green leaves catch the raindrops
That fall with soothing sound,
Then drop them slowly, slowly down,
'Tis better for the ground.

Second—
When rushing down the hillside,
A mighty freshet forms,
Our giant trunks and spreading roots
Defend our happy homes.

Third—
From burning heat in summer,
We offer cool retreat,
Protect the land in winter's storm
From cold, and wind, and sleet.

Fourth—
Our falling leaves in autumn,
By breezes turned and tossed,
Will make a deep sponge carpet warm
Which saves the ground from frost.

Fifth—
We give you pulp for paper,
Our fuel gives you heat,
We furnish lumber for your homes,
And nuts and fruit to eat.

Sixth—
With strong and graceful outline,
With branches green and bare,
We fill the land through all the year
With beauty everywhere.

All—
So, listen from the forest,
Each one a message sends
To children on this Arbor day,
"We trees are your best friends."

—*Primary Education.*

SONG OF DEDICATION.

AN ARBOR DAY TREE.

(*Air: "Columbia, the Gem of the Ocean"*)

The tree we are planting on this day
  Is chosen with tenderest care;
May beauty adorn it, hereafter,
  And clothe it with usefulness rare.
May green leaves appearing each springtime
  Be leaves of a fair book of fame,
And spread to the breezes the story
  Extolling the new-given name.

The tree is an emblem of greatness,
  As springing from one tiny seed,
It mounts ever upward and onward,
  An emblem of greatness, indeed!
The birds sing its praises to others,
  The winds carry swiftly the tale
The tree is the monarch of forest,
  Of hill, valley, greenwood, and dale.

—*Florida Arbor Day Annual.*

SELECTED RECITATIONS.

FIRST PUPIL.

To him who in the love of nature holds
Communion with her visible forms, she speaks
A various language; for his gayer hours
She has a voice of gladness, and a smile
And eloquence of beauty, and she glides
Into his darker musings, with a mild
And healing sympathy, that steals away
Their sharpness, e'er he is aware.

—*Bryant.*

SECOND PUPIL.

There is something nobly simple and pure in a taste for the cultivation of forest trees. It argues, I think, a sweet and generous nature to have this strong relish for the beauties of vegetation, and this friendship for the hardy and glorious sons of the forest. He who plants an oak looks forward to future ages, and plants for posterity. Nothing can be less selfish than this.—*Washington Irving.*

THIRD PUPIL.

For Nature beats in perfect tune,
And rounds with rhyme her every rune,
Whether she work in land or sea,
Or hide underground her alchemy.
Thou can'st not wave thy staff in air
Or dip thy paddle in the lake,
But it carves the bow of beauty there,
And the ripples in rhymes the oar forsake.
The wood is wiser far than thou;
The wood and wave each other know.
Not unrelated, unaffied,
But to each thought and thing allied,
Is perfect Nature's every part,
Rooted in the mighty Heart.

—*Emerson.*

FOURTH PUPIL.

Keeping up a fit proportion of forests to arable land is the prime condition of human health. If the trees go, men must decay. Whosoever works for the forests works for the happiness and permanence of our civilization. A tree may be an obstruction, but it is never useless. Now is the time to work if we are to be blessed and not cursed by the people of the twentieth and twenty-first centuries. The nation that neglects its forests is surely destined to ruin.—*Hon. Elizur Wright.*

FIFTH PUPIL.

One impulse from a vernal wood
  May teach you more of man,
Of moral evil and of good,
  Than all the sages can.

—*Wordsworth.*

SIXTH PUPIL.

Faint murmurs from the pine-tops reach my ear,
As if a harp-string—touched in some far sphere—
Vibrating in the lucid atmosphere,
Let the soft south wind waft its music here.
—*T. B. Aldrich.*

SEVENTH PUPIL.

Old trees in their living state are the only things that money cannot command. Rivers leave their beds, run into cities and traverse mountains for it; obelisks and arches, palaces and temples, amphitheaters and pyramids rise up like exhalations at its bidding. Even the free spirit of man, the only thing great on earth, crouches and cowers in its presence. It passes away and vanishes before venerable trees.—*Landor.*

EIGHTH PUPIL.

Plant in the springtime the beautiful trees,
So that in future each soft summer breeze,
Whispering through tree-tops may call to our mind,
Days of our childhood then left far behind.
—*West Virginia Arbor Day Annual.*

ON THE GRASSHOPPER AND CRICKET.

The poetry of earth is never dead:
When all the birds are faint with the hot sun,
And hide in cooling trees, a voice will run
From hedge to hedge about the new-mown mead.
That is the Grasshopper's—he takes the lead
In summer luxury,—he has never done
With his delights; for, when tired out with fun,
He rests at ease beneath some pleasant weed.
The poetry of earth is ceasing never:
On a lone winter evening, when the frost
Has wrought a silence, from the stove there shrills
The Cricket's song, in warmth increasing ever,
And seems to one, in drowsiness half lost,
The Grasshopper's among some grassy hills.
John Keats.

MANUFACTURE OF MATCHES TAKES MUCH FINE TIMBER.

The civilized nations of the world strike three million matches every minute of the twenty-four hours. Nearly one-half of these are ignited in this country. Americans use up the enormous total of seven hundred billion a year, and have a larger match bill than any other nation in the world.

Hundreds of factories over the country are engaged in this industry, about which the general public knows but little. Some of the plants are very large; one on the Pacific Coast covers 240 acres, and has thirty-two miles of railroad to supply the match machines with 200,000 feet of sugar pine and yellow pine logs a day.

The rejected timber from the match factories is good enough to be made into many articles of a larger size; and the by-product end of the match business becomes the largest end, so far as bulk is concerned. Among the by-products turned out by a large Pacific Coast factory are 1,000 doors and 800 sashes daily.

As a matter of fact, it would be impossible to carry on the match business at all, at present prices, if the rejected lumber were not worked into something else. The room where matches are made is frequently the smallest department of a match factory. The larger portions contain the sawmills and planing mills where doors, sash, shingles, lath, siding, posts, cordwood, and many other salable commodities are made ready for market.

Wood for matches is a much more serious problem in some of the European countries than it is as yet in the United States. The most suitable match timbers are pine, linden, aspen, white cedar, poplar, birch, and willow. Others, however, are occasionally used. Germany imports willow and aspen from Russia. Some time ago the German match manufacturers petitioned the minister of agriculture to cause the foresters to plant aspen in the state forests to supply wood for matches without importing it.

In the United States, as well as in Canada, a diligent search for choice forests is maintained, and very large tracts have been bought by companies in the match business, not only to meet present demands, but to provide for years to come. In a single year one match company cut 225 million board feet of pine in the Lake region. The cut in that instance was exceptionally large, however, in order to save timber which was threatened by the ravages of a bark beetle. There

are more than 150 match manufacturers in the United States, and about half that number in Canada.

In common with other industries of the United States which depend upon existing forests, the match-makers are within sight of a shortage in the wood supply. When present timber holdings have been depleted, they can not be duplicated. If forced to economize, the people of this country might get along with fewer than twenty-five or thirty matches a day per capita as at present; but they will probably insist on having them, and will demand, as in Germany and France, that foresters plant and grow timber especially for matches. This could readily be done if forests were placed under competent management and not left to run wild, producing cordwood and brush when they ought to grow merchantable timber.

—*Forestry and Irrigation, Dec. 1907 (Adapted).*

THE WRONGS OF MOTHER EARTH.

O Mother Earth, thy lot hath been full sad,
And greed for wealth hath surely made men mad,
That they should rob thee of thy wondrous garb,
In which thou w'rt clothed by Almighty God.

Thy mountains have been stripped of forests green
Until we weep, such horrid sights are seen.
Thy valleys rent and scarred with ghastly seams,
Thy lordly rivers turned to turbid streams.

And all for what? For greed of tawdry gold!
Because men worship still that god of old
Before which Abram's children danced and sang
Till all the desert with their praises rang.

But as of old that golden calf was broke
Thou too shalt rise and with a mighty stroke
Strike, not the calf but them that worship it.
Nor may they 'scape, nor lessen it a whit.

By night the skies shall answer to the glow
Of raging fires on the earth below.
By day the sun be never seen to shine,
And vengeance for thy wrongs shall then be thine.

The floods, that in thy kindness Thou hast kept
Beneath thy forest shade and ocean depth,
Shall burst their bonds and rage through all the land,
No more shalt thou put forth thy staying hand.

And when the fire and flood have spent their force,
Then men shall see the error of their course,
Shall know the fatal ruin they have wrought
Would not have been had they but taken thought.

—By permission of the author.

FORESTS CREEPING BACK.

And Old Virginia Plantations and Ancient Landmarks Disappearing.

Forests are creeping back over abandoned farms in many parts of the east. When wornout fields can no longer produce agricultural crops nature takes them back and clothes them with trees again to give them shade and rest and slowly restore fertility to the soil. This is more in evidence in the first settled parts of Virginia perhaps than anywhere else in the country, for the reason that a longer time has passed since the original forests were cleared away and the second growth has had better opportunity to take the land.

In James City county, Virginia, the first permanent English colony in the United States was established 300 years ago, and in that old country the whole cycle of deforestation and reforestation may be studied. Agriculture for a long period pushed the forests back and plantations covered the country; then the forests came again and crowded agriculture out. A hundred years before the Revolution tobacco plantations occupied the best parts of tidewater Virginia and had pushed up the rivers into the Piedmont region.

Continuous bodies of cleared land embraced thousands of acres. Nearly every large plantation had a river frontage and a wharf, and ships carried the tobacco directly to Europe and brought merchandise back. It would be difficult, perhaps impossible, to determine with approximate accuracy the proportion of clear land to the forests in tidewater Virginia 50 years before the Revolution, but there can be no doubt that there was more cleared land then than now.

Many great Virginia plantations of colonial times have contracted under the pressure of surrounding forests, giving up field after field to the pine seedlings until small openings now mark sites of former estates and all else is woods—second growth or third growth. The early settlers found a soil of great fertility. They drew upon it as though it would last forever. It yielded tobacco and corn for generations and made fortunes for the planters. But the result was inevitable. The soil wore out. A few patches of land are pointed out in James City county and also in nearby districts which have been under continuous cultivation for nearly or quite 300 years. Jamestown island, the site of the very earliest settlement, still produces corn, hay, and peanuts. But such places are few. The majority of the oldest plantations have partly or wholly gone back to forest.

In traveling through the region now it is frequently possible to note the successive stages of the forest's advance into the cleared land. In one place a body of timber may consist of trees a foot in diameter and probably 70 feet high. Their even tops and uniform size show that they occupy the site of a former field where seedlings took possession after the plow left off its annual tillage. Adjoining such a wood lot another may often be seen with smaller and younger trees, suggesting that they occupy the site of a field abandoned at a later date. Near by may be seen a still younger stand. In some localities the even tops of one wood lot are seen beyond another, descending like stair steps and marking the sites of one abandoned field beyond another, each succeeding one a little later and the trees a little smaller.

The descending series frequently ends with a field where young trees are just starting from seeds blown from neighboring woods. It may mark the site of the last remnant of a former plantation which was allowed to relapse into woods because the soil was worn out.

Few if any of the primeval forests remain in tidewater Virginia, but large trees of second growth exist. A sycamore more than 200 years old, and known to be of second growth, was cut this year on a site of a building burned during Bacon's rebellion, in 1676, and many other trees as large are growing where tobacco was cultivated two centuries ago. The forest in its hunger to occupy again is no respecter of historical places. It is slowly taking the intrenchments at Yorktown, where the British made their last stand, and the tablet marking the very spot where General O'Hara surrendered the sword of Cornwallis (then an open field) would soon be invisible if the ax were not frequently called into use to clear away the encroaching woods.

—*Baltimore Sun.*

GARDENS FOR SCHOOL CHILDREN.

Much has been said and written during the past five or six years on the subject of school gardens, and many efforts have been made by teachers and pupils to carry out the suggestions of these speakers and writers. In the majority of cases these efforts have not been crowned with the success that the enthusiastic teacher and her equally enthusiastic pupils had reason to expect. Why is this?

In the first place, few teachers and pupils should attempt to grow anything to maturity in a school garden. The reason for this is plain. Wisconsin schools close during the latter part of May and early June; the teacher goes to her home, and the little garden in which all have taken such pleasure and pride, lies neglected and forgotten, during the very weeks in which it needs most attention and care. In a few days, at this rapidly growing season of the year, the weeds have overrun the garden and a little later have completely starved out the plants. The garden, once a pleasant spot to look upon, becomes an offense to the eye and an object of derision to the passerby, perhaps to the children themselves. *What, then, is the use of a school garden?*

The school garden's sole and only use is that of an experimental plot with which to teach the conditions influencing the growth of plants and in which to interest children in the study of plant life. Here the soil may be properly fertilized, carefully prepared, thoroly pulverized, and the seed-bed made by the children themselves under the guiding hand of the teacher. In this plot the seeds may be placed at the proper distances apart, covered to the right depth, and their germination and growth watched and carefully studied from day to day.

Each pupil may keep a note book in which he records the date of planting, the date when the first plants appear, the progress of their growth, and the time of the successive cultivations. He may also keep a record of weather conditions from the date of planting, noting the morning, noon, and evening temperature, if a thermometer is at hand, and whether the day is clear, cloudy, or rainy. In this note book he may keep a record of all of his work in this garden.

To each pupil may be assigned a particular portion and several pupils may be encouraged to cultivate the same kind of plants and vie with each other in trying to force them to make the most rapid growth. The teacher may encourage this competition and assist the less successful to find the cause of their failures.

This garden should not be large, its size depending upon the number of pupils in the school. In no case should any pupil have more space allotted to him than he can easily care for in the best possible manner.

When school is about to close, all plants should be pulled up and the plot sown to clover and oats or some other quick-growing crop, to keep it free from weeds and that it may be in good condition for the next year's garden. In no case should it be left to grow up to weeds and become an eyesore and a discouragement to the pupils who planted it. Better not plant a garden at all.

In conjunction with this school garden, and of far greater importance, the pupil may be encouraged to grow plants to complete maturity in the garden at home. Here too, he may have a small plot, all his own, on which to exercise the same industry and care he has been taught to use at school. In this home garden he may profit by his school experience and by better planting, more thorough cultivation, careful thinning and the like, bring his plants to complete and more nearly perfect maturity.

Each county superintendent should see to it that there are prizes offered by the county fair authorities for grains, vegetables, and fruits grown by school children in their home gardens. When this is done and rightly done, parents will not complain that their children take no interest in gardening and teachers will not give voice to that wail now too often heard, "O, what can I do to interest my pupils in the study of agriculture?"

K. L. Hatch,
Principal of the Winnebago County School of Agriculture, Winneconne, Wis.

AGRICULTURAL BULLETINS.

The bulletins listed below may be obtained free by addressing H. L. Russell, Dean of the Department of Agriculture and Experiment Station, University of Wisconsin, by whom the list and annotations were prepared for this annual.

Bulletin No. 111, Oat Smut and Its Prevention, giving the extent of the disease of oat smut in Wisconsin and the method of treatment for the prevention of smut in which formalin solution is used for the eradication of this disease.

Bulletin 126, Two Ways of Treating Tuberculosis in Herds, showing the advisability of a farmer to utilize the tuberculin test in order to

determine whether or not his herd has tuberculosis. By means of this test the disease can be quickly recognized and frequently much loss will be prevented.

Bulletin No. 127, The Principles and Practice of Horse Breeding, in which is presented the great importance of using pure bred animals for sires and also the hereditary influence of unsound sires upon breeding stock. This bulletin also gives a description of the various breeds of horses with suggestions for the determination of the disease in horses.

Bulletin No. 133, Distribution of Tuberculosis in Suspected and Non-suspected Herds in Wisconsin, showing that this disease is quite widely spread in herds as determined by the application of the tuberculin test.

Bulletin No. 135, The Spraying of Potatoes for Prevention of Leaf Blight and Rot, pointing out the great increase in product which occurs from the use of bordeaux mixture in holding this disease in check.

Bulletin No. 136, Practical Directions for Preserving Native Fruits and Vegetables, giving different methods for preserving common fruits.

Bulletin No. 138, Land Drainage, giving the general principles necessary to be followed in draining of lands, arrangement of ditches, tiles, etc., and miscellaneous details relative to improvement of lands in this way.

Bulletin No. 139, Principles and Maintenance of Soil Fertility, a general description of the conditions affecting the chemical composition and influencing fertility in various kinds of soil.

Bulletin No. 146, Drainage Conditions of Wisconsin, points out the relatively large areas of this state that would be greatly benefited by the application of improved drainage.

Bulletin No. 151, Condimental Stock Foods, giving the results of analyses and evidence obtained by different members of the Experiment Station where various condimental stock foods have been used for feed purposes.

Bulletin No. 153, Portable Hog Houses, giving full description for the construction of house, cost of sheds for the housing of hogs in paddocks or fields.

Bulletin No. 154, A Creamery Method for the Determination of Water in Butter, giving the details of the new method in vogue at the Dairy School for the determination of the amount of water in butter.

Bulletin No. 156, A Simple Test for Casein in Milk and Its Relation to the Dairy Industry, gives a description of the new Hart casein test by which it is possible for the practical dairyman to determine the casein content.

Special Bulletin, Tuberculosis of Domestic Stock and Its Control, calls special attention to the necessity of using the tuberculin test for determining the actual condition of a herd.

Special Bulletin, The Seeding, Growing and Curing of Alfalfa, describes the conditions necessary for the proper seeding, developing and curing of this relatively new improved forage plant for Wisconsin.

GOIN' BAREFOOT.

It's more fun goin' barefoot than anythin' I know,
  There ain't a single nother thing that helps your feelin's so.
Some days I stay in muvver's room, a-gettin' in her way,
  An' when I've bothered her so much, she sez, "Oh, run and play!"
I say, "Kin I go barefoot?" En she sez, "If y' choose."
  Nen I alwuz wanter holler when I'm pullin' off my shoes!

It's fun a-goin' barefoot when yer playin' any game,
  'Cause robbers would be noisy, an' Indians awful tame
Unless they had their shoes off when they crep' up in the night,
  An' folks can't know they're comin' till they get right close in sight.
An' I'm surely goin' barefoot every day when I get old,
  An' haven't got a nurse to say I'll catch my death of cold.

An' if your goin' barefoot, yer want to go outdoors;
  Y' can't stretch out an' dig yer heels in stupid. hardwood floors,
Like you can dig 'em in th' dirt. An' where th' long grass grows,
  Th' blades feel kinder tickley and cool between yer toes.
So when I'm pullin' off my shoes I'm mighty 'fraid I'll cough,
  Cause then I know Ma'd stop me 'fore I got my stockin's off.

If y' often go 'round barefoot there's lots o' things to know,—
  Of how to curl yer feet on stones, so they won't hurt y' so;
An' when th' grass is stickley, an' pricks y' at a touch,
  Jes, plank yer feet down solid, an' it don't hurt half so much.
I lose my hat mos'every day,—I wish I did my shoes;
  Er else I wisht I was so poor I hadn't none to lose!

—*Burges Johnson.*

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COLUMBIA'S EMBLEM.

Blazon Columbia's emblem,
    The bounteous, golden corn!
Eons ago, of the great sun's glow
    And the joy of the earth, 'twas born.
From Superior's shore to Chili,
    From the ocean of dawn to the west,
With its banners of green and silken sheen
    It sprang at the sun's behest;
And by dew and shower, from its natal hour,
    With honey and wine 'twas fed,
Till on slope and plain the gods were fain
    To share the feast outspread;
For the rarest boon to the land they loved
    Was the corn so rich and fair,
Nor star nor breeze o'er the farthest seas
    Could find its like elsewhere.

In their holiest temples the Incas
    Offered the heaven-sent Maize—
Grains wrought of gold, in a silver fold,
    For the sun's enraptured gaze;
And its harvest came to the wandering tribes
    As the gods' own gift and seal,
And Montezuma's festal bread
    Was made of its sacred meal.
Narrow their cherished fields; but ours
    Are broad as the continent's breast,
And, lavish as leaves, the rustling sheaves
    Bring plenty and joy and rest;
For they strew the plains and crowd the wains
    When the reapers meet at morn,
Till blithe cheers ring and west winds sing
    A song for the garnered corn.

The rose may bloom for England,
    The lily for France unfold;
Ireland may honor the shamrock,
    Scotland her thistle bold;

But the shield of the great Republic,
The glory of the West,
Shall bear a stalk of the tasseled corn—
The sun's supreme bequest!
The arbutus and the goldenrod
The heart of the North may cheer,
And the mountain laurel for Maryland
Its royal clusters rear,
And jasmine and magnolia
The crest of the South adorn;
But the wide republic's emblem
Is the bounteous, golden Corn!

—*Edna Dean Proctor.*

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WHICH SHALL IT BE?

First Boy—
If we are all to choose and say
What trees we'd like to plant today,
Seems to me none could be
Half so good as a Christmas tree!
For surely even a baby knows
That's where the nicest candy grows.
Candy on a Christmas tree,
That's what pleases me!

Second Boy—
Planted out, 'twould never bear—
But, after all, why should we care?
The richest thing is what we bring
From sugar maples in the spring;
So now I'll set a maple here,
For feast and frolic every year.
Sugar from a maple tree,
That's what pleases me!

Third Boy—

Sweets are good most any day,
But as for trees, I'm bound to say,
A shag-bark tall is best of all
When once the nuts begin to fall;
And so a hickory tree I'll set,
And piles of fun and nuts I'll get.
Nuts from a hickory tree,
That's what pleases me!

Fourth Boy—

I shall plant an apple tree.
That's the best of all for me;
And each kind to suit my mind,
On this one with grafts I'll bind.
Ripe or green, the whole year through,
Pie or dumpling, bake or stew,
Every way I like 'em best,
And I'll treat the rest.

—*Youth's Companion.*

PART RECITATION WITH MOTIONS.

(By the Little Ones.)

All.

(Fingers tapping desks)
Patter, patter comes the rain,
Over hill and over plain.

First Row of Pupils.

(Clasp hands in front, raise them gradually, till full circle is formed.)
Higher, higher climbs the sun,
Now our spring is just begun.

Second Row.

(Motion as if scattering seeds in aisles)
Scatter, scatter seeds once more,
Now that winter days are o'er.

Third Row.

(Both hands on desks raised gradually to full length, all rows same motion)

Upward, upward into light
Creep the shoots, tall and upright.

Fourth Row.

(Motion: arms still raised, swaying from right to left)

Boughs are swaying to and fro,
As the breezes come and go.

Fifth Row.

(Arms lowered gradually to desks; fingers moving to represent fluttering blossoms)

Blossoms sweet with perfume rare,
Flutter down through soft warm air.

Sixth Row.

(Hands raised as in the act of catching)

Now catch the fruit of red and yellow,
In the fall when ripe and mellow.

All.

(Hands gently clasped as if guarding the seed)

We guard the seed to plant next year,
That fruit for all may then appear.

—*Journal of Education, Boston.*

HOW TO STUDY BIRDS.

The study of birds, simply to know them by name as readily as we know our neighbors, Mr. Smith and Mr. Brown, requires time and patient, pains-taking observation. Years of careful study may not bring the desired results; but let us continue the work and the rare and long-sought for bird will frequently surprise us. This elusiveness is in itself fascinating. One can never predict what an hour of bird study may reveal.

If you are a teacher, and wish to become better acquainted with birds, get, if possible, a pair of opera or field glasses, a note book, and a

good bird book (Chas. K. Reed's Bird Guide, Part 2 for land birds is inexpensive, fifty cents, and quite complete), and study with your pupils. This study will establish a stronger bond between you and them than any study of books indoors. Begin the work as early as March the first, for the migrations north have already begun, and Wisconsin with its rivers and lakes, lying in the Mississippi Valley, is favorably located to attract the vast streams of migrants. The best time of day to look for birds is from six to nine in the morning and the best places are gardens and lawns about town, and trees and shrubbery near water. It is not necessary to tramp long distances, for few birds are found in dense woods. Notes should be jotted down at the time of observation, for when you consult your guide book, it is such a simple matter to confuse the markings of two or more birds seen, perhaps, the same day. Also you may not see a bird long enough the first time to identify it, and, perhaps, not again that season; then your notes will help to keep it well in mind for your second observation, however long delayed. Note carefully the prevailing color and any sharp markings on head, breast, wings, back, rump, and tail. You will find that the colors vary greatly in different lights. Compare its size with that of the English sparrow or robin. Note the shape of its body, of its head, whether crested or not, of its bill, of its wings,—long or short as compared with its tail, of its tail,—long, short, rounded, square, pointed, or forked. You ought now to be able to identify your bird in the guide book, but as in the case of our friend Mr. Smith or Mr. Brown we know something of his character, as well as his name, so with our bird friend, let us become better acquainted with him. What is his manner of flying and sitting? Does he walk or hop? What breakfast food does he like? Where and how is the nest built? Who builds it and of what material? What is the number, shape, size, and color of the eggs, and how long does it take to rear the family? One may visit a nest daily, but care should be taken not to disturb the owners, lest they become suspicious of harm and leave it.

When you have identified a bird by its dress you will wish to recognize it by its voice. During the nesting season, and earlier, the calls and songs of our common birds are heard daily, and can be studied and compared. Of the migrating birds, learn, as soon as possible, the joyous burst of song of the ruby-crowned kinglet; he seems to be bubbling over with music. Then, too, there is the song of the fox sparrow, most likely to be heard in an April snow storm—the faster it snows the happier he seems; the plaintive whistle of the white-throated sparrow, and the zee-zee-zee-zee of the black-throated green warbler mingled with the notes of others that claim our attention during their brief visits. To know a bird by its song affords much pleasure. Frequently, a bird,

though perfectly concealed, seems to hail us with call or song, in friendly greeting; let us not pass it by unheeded.

During the winter months, at least fourteen species remain in this vicinity; and with the occasional visits of pine and evening grossbeaks, northern shrikes, red-breasted nuthatches, snow flakes, juncos, red-poll linnets, tree sparrows, American and white-winged crossbills there is still much of interest for the bird lover. If you would have "the latch-string out and the bacon in the corner" for bird callers, fasten suet to a tree near the school house and a shallow box for cracked nuts, crumbs, and grain on the window sill. Most of our winter residents will be attracted to one table or the other. The birds, especially chick-a-dees, become quite tame and will often remain within two feet of the box while you replenish it. Last January the writer was standing near one of these "free lunch counters" when a red-breasted nuthatch flew to her hat and ran several times around the crown pulling at the trimming and pecking at the hat pin and not satisfied with that, he alighted on the lapel of her coat and began pecking at the lens of her field glass. Perhaps he had a curiosity to know how the humans looked through the field glass. Surely it was an auspicious beginning for a morning of bird study.

The need of laws to prevent the killing of birds or the destroying of their nests and eggs will be lessened as children become better acquainted with birds; for with the study there comes an interest and love that abides. In Whitewater, beginning March the first, several of the teachers get from their pupils weekly reports of birds seen, and from these reports a complete list of the different species is made and printed in the Whitewater Register. Each week the new arrivals are added to the printed list. Last year by the middle of June one hundred and fifty-seven had been seen, and since, in 1906, seven others were reported, we know that at least one hundred and sixty-four different species visit Whitewater. Interest in the subject grew as the list grew; parents as well as pupils sent in reports. Since this plan resulted in a more general and careful study of birds, we trust that others will try it.

—*Mrs. G. C. Shutts,*
Whitewater, Wis.

WHO STOLE THE BIRD'S NEST?

"To-whit! to-whit! to-whee!
Will you listen to me?
Who stole four eggs I laid,
And the nice nest I made?"

"Not I," said the cow, "Moo-oo!
Such a thing I'd never do.
I gave you a wisp of hay,
But didn't take your nest away
Not I," said the cow, "Moo-oo!
Such a thing I'd never do."

"Coo-coo! Coo-coo! Coo-coo!
Let me speak a word, too!
Who stole that pretty nest
From the little yellow-breast?"

"Caw! Caw!" cried the crow;
"I should like to know
What thief took away
A bird's nest to-day?"

"Cluck! Cluck!" said the hen;
"Don't ask me again.
Why, I haven't a chick
Would do such a trick.
We all gave her a feather,
And she wove them together.
I'd scorn to intrude,
On her and her brood.
Cluck! Cluck!" said the hen,
"Don't ask me again."

"Chirr-a-whirr! Chirr-a-whirr!
All the birds make a stir!
Let us find out his name,
And all cry, 'For shame!'"

"I would not rob a bird,"
Said little Mary Green;
"I think I never heard
Of anything so mean."

"It is very cruel, too,"
Said little Alice Neal;
"I wonder if he knew
How sad the bird would feel?"

A little boy hung down his head
And went and hid behind the bed,
For he stole that pretty nest
From poor little yellow-breast;
And he felt so full of shame,
He didn't like to tell his name.

—*L. Maria Child.*

THE AUDUBON SOCIETY.

The purpose of the Audubon Society is too well understood to need reiteration. This article is to set forth some of its methods, especially such as apply to schools. It is particulary important that the work of the Audubon Society be brought before the pupils of the schools, because not only is that the time of life when impressions are strongest and when tendencies develop, but also every boy may, through a lack of proper training, be a very destructive enemy of bird life. We hope to see the time when parents will consider a spyglass a better present for their son than an air gun.

Largely through the efforts of the Audubon Societies, there is hardly a state in the Union but has some stringent laws for the protection of birds. But it is not enough to stop the destruction of birds. Let us also work for the encouragement of bird life. The destruction of forests has taken away the natural building places of many species. Almost every householder insists upon keeping one or more semi-domesticated, totally worthless cats, every one of which destroys a number of birds each year. If we enjoy having the song birds in our vicinity, some of us have a very queer way of showing our appreciation.

It is the aim of the Wisconsin Audubon Society to spread by all available means, knowledge of bird life which will lead to a clearer idea of their worth. Some of the means adopted are as follows: Circulars are distributed by the Society to those known to be interested. A set of colored lantern slides together with a type-written lecture may be rented for a small amount from Prof. W. S. Marshall, 114 E. Gorham St., Madison, Wis. The organization of school branches of the Audubon Society is encouraged. Any Wisconsin School Branch may, without expense, have the use of the Gordon and Merrill libraries of bird books by applying to Thos. R. Moyle, Appleton, Wis.

Every Wisconsin School Branch is required to subscribe for at least one copy of the magazine "By the Wayside," published jointly by the Wisconsin and Illinois Audubon societies. This magazine is published at Appleton monthly during the school year. Its subscription price is the very modest sum of twenty-five cents. The "Wayside" is devoted primarily to birds, bird protection, and bird encouragement, and secondly to nature study in general. There is a nature study department in charge of Dr. Ruth Marshall of the University of Nebraska, in which, at present, she is giving an outline of a course in nature study. There is a children's department in charge of Miss Edna S. Edwards of Appleton. In this department are published letters from our younger members. We award an honor badge each month for the best letter, preference being given to original observations.

In spite of the fact that country children are in close touch with nature, they study it least. The farmer too is the one most benefited by the birds; yet he is not unlikely to be their enemy. We are therefore especially anxious that our magazine, and the work of the Audubon Society in general, should reach the rural schools.

Thomas R. Moyle,
Appleton, Wis.

KEEP THE ARBOR DAY ANNUALS ON FILE.

The Arbor Day Annuals should be kept on file as a part of the school library. Beginning with next year indexes of the annuals will be printed at regular intervals, so that the material which they contain may be easily made available for use in connection with the regular school work or in preparing programs. Various features, such as the article on important trees of Wisconsin, by E. M. Griffith, State Forester and "Birds of Wisconsin," by Mr. and Mrs. I. N. Mitchell, are likely to be continued in series, and this will greatly add to the value of back numbers of the Annual.

THE BLUE JAY.

O Blue Jay up in the maple tree,
Shaking your throat with such bursts of glee,
    How did you happen to be so blue?
Did you steal a bit of the lake for your crest,
And fasten blue violets into your vest?
    Tell me, I pray you,—tell me true!

Did you dip your wings in azure dye,
When April began to paint the sky,
    That was pale with the winter's stay?
Or were you hatched from a bluebell bright,
'Neath the warm, gold breast of a sunbeam light,
    By the river one blue spring day?

O Blue Jay up in the maple tree,
A-tossing your saucy head at me,
    With ne'er a word for my questioning,
Pray cease for a moment your "ting-a-link,"
And hear when I tell you what I think,
    You bonniest bit of the spring.

I think when the fairies made the flowers,
To grow in these mossy fields of ours,
    Periwinkles and violets rare,
There was left of the spring's own color, blue,
Plenty to fashion a flower whose hue
    Would be richer than all and as fair.

So, putting their wits together, they
Made one great blossom so bright and gay,
The lily beside it seemed blurred;
And then they said, "We will toss it in air;
So many blue blossoms grow everywhere,
    Let this pretty one be a bird!"

—*Susan Hartley Swett.*

THE ACCESSORY.

She went to church in holy zeal,
With a dead bird on her hat.
She paused, while on the steps to kneel,
With a dead bird on her hat.
The parson preached, "Thou shalt not kill,"
And God she thanked, with conscious thrill
That she, good soul, had done no ill—
With a dead bird on her hat.

She loved to hear the birdling sing,
With a dead bird on her hat.
She loved to watch them free awing,
With a dead bird on her hat.
She thought how sad the world would be
If ne'er their plumage we might see
Or hear their warblings in the tree—
With a dead bird on her hat.

She held her home the dearest, best,
With a dead bird on her hat.
She called her little home her "nest,"
With a dead bird on her hat.
Her brood she circled with her arm
To keep each happy child from harm,
To still her own strange, vague alarm—
With a dead bird on her hat.

She could not bear death's form to see,
With a dead bird on her hat.
She could not look on cruelty,
With a dead bird on her hat.
She wept at others' sufferings,
She gave her life to holy things,
And wore the "loveliest of wings—"
A dead bird on her hat.

—*Douglas Malloch.*

From "In Forest Land." Used by permission of the "American Lumberman."

BIRD TRADES.

The swallow is a mason,
And underneath the eaves
He builds a nest and plasters it
With mud and hay and leaves.

Of all the weavers that I know,
The oriole is the best;
High on the branches of the tree
She hangs her cosy nest.

The woodpecker is hard at work—
A carpenter is he—
And you may hear him hammering,
His nest high up a tree.

Some little birds are miners;
Some build upon the ground;
And busy little tailors too,
Among the birds are found.

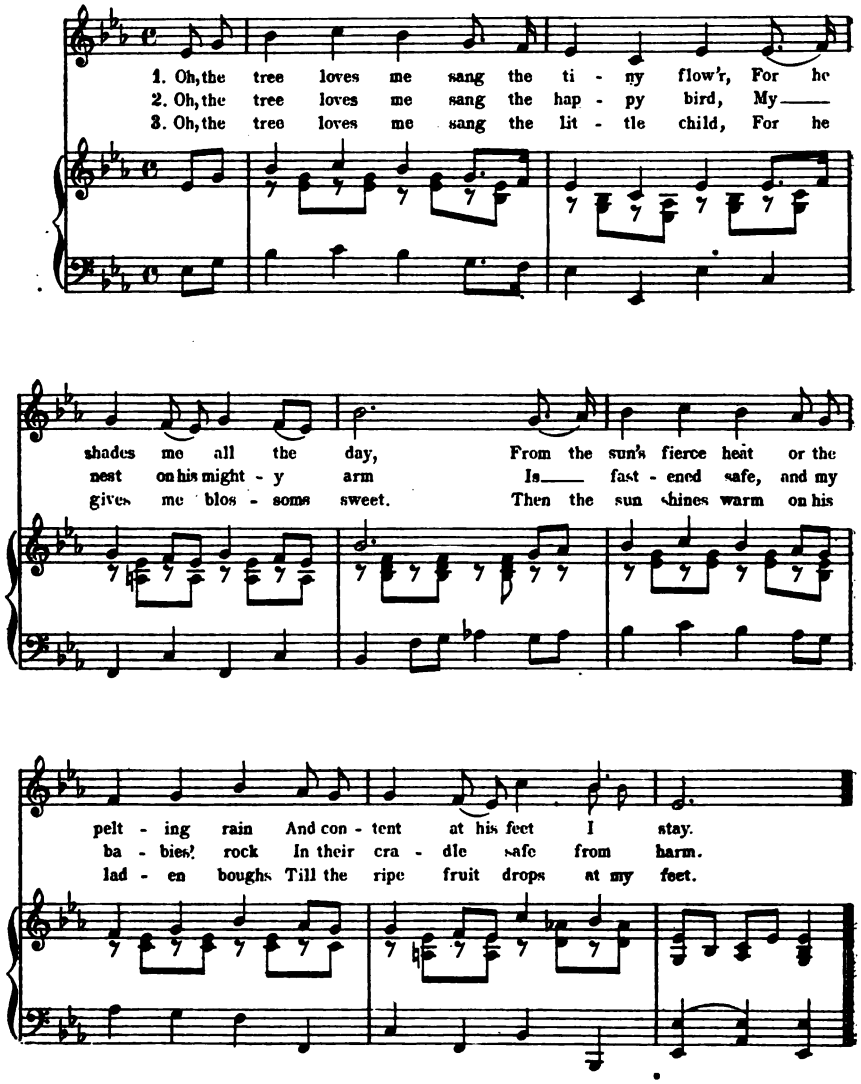
THE BLUEBIRD.

Listen a moment, I pray you; what was that sound that I heard?
Wind in the budding branches, the ripple of brooks, or a bird?
Hear it again, above us! and see a flutter of wings!
The bluebird knows it is April, and soars toward the sun and sings.
Never the song of the robin could make my heart so glad;
When I hear the bluebird singing in spring, I forget to be sad.

Hear it! a ripple of music! sunshine changed into song!
It sets me to thinking of summer when the days and their dreams are long.
Winged lute that we call a bluebird, you blend in a silver strain
The sound of the laughing water, the patter of spring's sweet rain.
The voice of the winds, the sunshine, and fragrance of blossoming things,
Ah! you are an April poem, that God has dowered with wings!

—*Eben Eugene Rexford, Shiocton, Wis.*

THE TREE'S FRIENDS



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From "Songs of the Child World," by Alice C. D. Riley and Jessie L. Gaynor. Copyright 1897 by the John Church Co., Cincinnati, Ohio.

36

THE WIND.

ROBERT LOUIS STEVENSON. ROSSETTER G. COLE.

1. I saw you toss the kites on high, And blow the birds a -
2. I saw the ma - ny things you did, But al - ways you your-
3. O you that are so strong and cold, O blow - er, are you

mf

bout the sky; And all a - round I heard you pass, Like la - dies' skirts a -
self you hid; I felt you push, I heard you call, I could not see your
young or old? Are you a beast of field and tree, Or just a stron-ger

cross the grass, O wind, O wind, a-blow-ing all day long, O wind, O
self at all, O wind, O wind, a-blow-ing all day long, O wind, O
child than me? O wind, O wind, a-blow-ing all day long, O wind, O

a little slower.

wind, that sings so loud a song!

a little slower. *in time.*

From "Melodic Third Reader." Used by permission of the American Book Co.

THE BEAUTIFUL WOODS

SARAH C. PADELFORD — EMORY P. RUSSELL.

1. O the pleas-ant woods of Spring-time! When ba-by ferns a-wake
2. O the joy-ous woods of Sum-mer! When un-der man-tles green,
3. O the peer-less woods of Au-tumn! When flam-ing are the trees
4. O the mag-ic woods of Win-ter! When snow-flakes in the air

Their ti-ny fin-gers o-pen-ing, White buds to blos-soms break.
The for-est trees are gath-er-ing The sun-light's gold-en sheen.
In taw-ny sun-light shim-mer-ing, Or, flash-ing in the breeze.
With spot-less robes are cov-er-ing The branch-es brown and bare

The wal-nuts hang their tas-sels out, The wil-lows bend to greet The
In mos-sy dells, by tink-ling rills The birch-es, robed in white Are
The ma-ples blush-ing, give their wealth, The chestnuts show-er down Their
The spruce and hem-lock, pine and fir, Are wear-ing still their green, And

cro-cus-es and vi-o-lets, Up-spring-ing at their feet.
guard-ed by the gi-ant oak, Their stead-fast, stal-wart knight.
treas-ures rich, with price-less gems From black oak's gold-en crown.
thus through-out the chang-ing year, The love-ly woods are seen.

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From Songs of Happy Life published by Silver, Burdett & Co. Used by permission

BOB WHITE

31

GEORGE COOPER — MARY S. CONRADE

Allegretto

1. There's a plump lit-tle chap in a speck- led coat, And he sits on the
2. Is he hail-ing some comrade as blithe as he? Now I won-der where
3. Ah! I see why he calls; in the stub - ble there Hide his plump lit-tle

zig - zag rails remote, Where he whistles at breez - y, brac-ing morn,
Rob - ert White can be! O'er the bil-lows of gold-en and am - ber grain
wife and ba - bies fair! So con-tent-ed is he, and so proud of same,

f *p Rit.*

Where the buckwheat is ripe, and stacked the corn: "Bob White! Bob White! Bob White!"
There is no one in sight—but, hark again: "Bob White! Bob White! Bob White!"
That he wants all the world to know his name: "Bob White! Bob White! Bob White!"

f *p Rit.*

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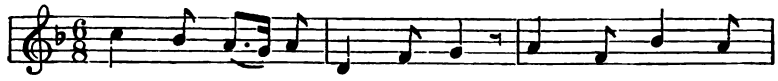
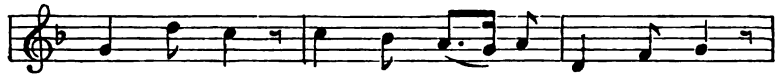
From "Songs in Season."

LULLABY

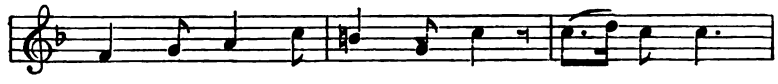
KATE LOUISE GUILD — CARYL B. RICH



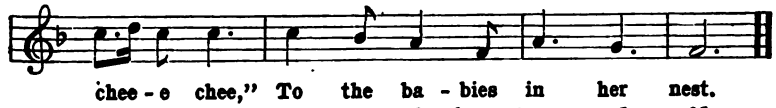
1. Bye - low, ba - by, bye - low bye! Lit - tle birds are
2. Bye - low, ba - by, bye - low bye! Lit - tle lambs are
3. Bye - low, ba - by, bye - low bye! Ba - by too must



in the nest; Moth - er bird is watch - ing nigh;
in the fold; Cud - dled close they sleep - ing lie;
sleep and rest; Moth - er sings and watch - es nigh;



Hear her sing - ing from the tree, "Chee - e chee,
While the bird sings from the tree, "Chee - e chee,
Soft - er sounds from yon - der tree,— "Chee - e chee,



chee - e chee," To the ba - bies in her nest.
chee - e chee," They are safe from storm and cold.
chee - e chee," To my ba - by who sleeps best.

From "The Sunshine Primer," published by Ginn & Co. Used by permission of the authors.

CUT ALONG THIS LINE.

County of .....

Report of the informal ballot on the State Flower of Wisconsin.

City of .....

or

Incorporated village of .....

or

District No. ..... Town of .....

Name of school not included above .....

Vote taken when? .....

Flower.	Number of votes.	Flower.	Number of votes
1. Trailing Arbutus		11. Painted Cup (Castelleia coccinea)	
2. Wild Aster		12. Pasque Flower	
3. Large Blue Flag (Iris versicolor)		13 Wild Rose	
4. Wild Columbine		14 Shooting Star	
5. Wild Crab Apple Blossom		15. Violet	
6. Golden Rod		16. Wild Sweet William, Prairie Pink (Phlox)	
7. Lady's Slipper		17. Wake Robin, Trillium	
8. American Turk's-cap Lily		18. White Water Lily	
9. Liverwort (Hepatica)		19.	
10. Marsh Marigold, Cowslip		20.	

Total number of votes cast .....

I hereby certify that the above is a correct statement of the vote on the choice of a State Flower of Wisconsin taken as above specified.

Name .....

Official position .....

P. O. Address .....

Date of Report .....

N. B.—For directions, see the next page.

After filling out the within blank, cut along the line indicated and send the report to C. P. Cary, State Superintendent of Public Instruction, Madison, Wis. If you are teaching under a supervising principal or city superintendent, send the report to that official, who will compile the reports and communicate the result on a similar blank to the State Superintendent.

Use no other form of report. Extra blanks for reports may be had on application.

For details as to this vote, read the article "Selecting a State Flower" on page 22 of this Annual.

BIRDS OF WISCONSIN

A Continuation of the Wisconsin Bird Study Bulletin of 1906

BY

MR. and MRS. I. N. MITCHELL

BROWN CREEPER.
(Certhia familiaris americana).
Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO

Brown Creeper.

Common as a migrant; summer resident in northern half of the State; sexes alike; length five and two-thirds inches; nest behind the loosened bark of trees and stumps, built of strips of bark, feathers, moss; eggs five to eight.

Although the brown creeper winters sparingly in the southern half of Wisconsin, to the great majority of our people, it is known only as a spring and fall migrant. On the upward journey it passes through the State and beyond to glean its summer's living from the tree-trunks of the great forests of Canada.

During the last week of March and the first week of April even the casual observer is apt to notice a little gray, or brownish bird creeping up the trunks of the trees. Stopping to watch the little fellow it appears that he is very methodical, very busy, and very persistent. It seems to be not only business that occupies him, but a very serious business. There is no stopping to exult for a moment in song, no idling away of time in preening of feathers, none of these little by-plays of the early mating season, nothing but that serious, persistent gliding from one tree to another, up it and on to the foot of the next, that suggests one of the old-time copy-book exercises, "downglide-up, downglide-up."

But the pen exercise lasted only for a page, while the creeper's exercise begins early in the morning, lasts till dusk and begins again early the next morning and the morning after. It must be that his long, thin, curved bill or those apparently sharp eyes are less efficient in finding food hidden in the cracks of the bark than those of the chickadee or nuthatch, who stop now and again to look about on the world or to play; or, that the creeper is more particular about his diet. Certain it is that the nuthatch and chickadee are fond of suet and when they find a tree on which it is fastened, they return to it daily. Not so the brown creeper; in our experience, it proves no attraction to him. We remember to have watched one once as he neared a piece of suet while creeping up one of our trees. He sampled it and passed on without lingering or offering any other expression of approval.

In climbing a tree, the creeper sometimes follows a straight course up the bole. Much more frequently, he seems to know that the tree will furnish more food if he climbs the spiral staircase of its trunk until he reaches the smooth bark where there are no cracks or where the harvest is too small to waste valuable time upon.

In this spiral journey he is so intent that you may approach to within a few feet of his tree. He may notice you, and keep the tree between himself and you, or he may ignore you altogether.

The picture is a good one, and shows very well the bark-like mixture of brown and white on back and wings, the red-brown of the rump, the brownish gray of the long, harsh, pointed tail, the white of the under parts, and the distinctly curved bill. Unless you imagine that the little birch tree is within three or four feet of you, the bird will appear too large, for the figure is life size. If you will watch the little fellow while he is at work you will notice that he sits closer to the tree, in fact he often appears to have flattened himself out against it. Perhaps that is in cold weather, for the woodpeckers and nuthatch, when it is cold, sit close enough to cover their feet with their feathers as if to keep them warm.

The creeper is not always as silent as when he is on the journey northward. When he has reached his journey's end and has become occupied with mating and the cares of the nest, he finds time to indulge in a short bit of a song, a sweet little song, but like the bird, soft and subdued.

The writers' acquaintance with the brown creeper began one wintry day in early spring. A thud against the window pane called our attention, and on the window sill lay a little bird apparently dead. We brought it into the house, and as we held it in our palms and examined its markings it gradually recovered from its stunning shock and by the time we had completed our examination was apparently as well as ever. As soon as our hand was opened on the porch, it promptly flew to the nearest tree and resumed its life work of hunting insect eggs in the crevices of the bark.

FROM COL. F. M. WOODRUFF

19

SLATE-COLORED JUNCO.
(Junco hyemalis).
Life-size.

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JUNCO, SLATE-COLORED JUNCO, SNOWBIRD.

Common in spring and fall, a few remain through the winter; sexes similar, female duller; length six and one-fourth inches; nest usually on the ground in a clump of low bushes, of grass, and moss lined with fine grass and hair; eggs four or five; song a modest trill.

To many people in Wisconsin the junco is a real snowbird. He makes his appearance in November, coming from the north where he has been spending the summer, but lingers about in thicket, copse, and bushy lowground till overtaken by the cold and snow. Then most of them scamper on to the south stopping all along the way to the Gulf states.

For the few that remain, the winter seems to have no terrors. They roam over the country in little bands and glean a satisfactory harvest chiefly of weed seeds. In this way they have a share in the fight that the farmers wage against the weeds. No one but a farmer can appreciate the amount of time, thought, and energy annually expended in the effort to suppress the weeds, some of which, like the Canada thistle. Russian thistle, ragweed, mustard, and sorrel have become national evils. In like manner no one, not even a farmer, can appreciate the helpfulness of the birds—especially our native sparrows, of which the junco is one. in keeping the weeds in check. Much study has been given to the food of birds and to their influence in an economic way, upon the problems of the farm. For instance, Dr. S. D. Judd, of the Department of Agriculture, Washington. says that 1,000 pigweed seeds were found in the stomach of a snowbunting and that 700 seeds of pigeon grass were taken from the stomach of a single tree sparrow. Professor Beal, who was studying the same problem in Iowa, after examining the stomachs of tree sparrows and estimating the number of these birds that spent the winter in the state, found that, taken together, they destroyed about 875 *tons* of weed seed per year.[1] What the tree sparrow is doing in Iowa he and the junco and all of our native sparrows are doing in Wisconsin. Take off your hat to the junco, you tiller of the soil, for he is a co-worker and entitled to your respect.

But who is this junco? How may I know my helpful co-partner? Well. do not expect to see him in the summer, unless it be in the very northern part of the State. Look for him in flocks about the middle of November. Then the junco is common and every door yard has its quota. Look for a slate-colored, or blue-gray bird. The blue-gray is touched off here and there with white. The bill is nearly white and is quite conspicious when you

[1] F. M. Chapman. The Economic Value of Birds to the State. page 16.

look him in the face. The under parts are white and the outside feathers of the tail are white. These white tailfeathers are one of the most striking characteristics of the bird. His movements are quick and nervous, and at every little flitting he spreads the tail enough to show a momentary flick of white, that makes you think of the twinklings of light seen when moving pictures are being shown.

If the junco does not visit you during the winter, look for him again in the spring. He usually appears about the second week in March. He seems to be in no hurry to reach his northern nesting grounds but lingers through March and April and even into the month of May.

The juncos are birds that appreciate the lunch counter and often come freely about the door if crumbs or seeds are scattered for them.

A Good Lunch Counter Report.

In the fall of 1906 we put up, at our home, a feeding-shelf for the birds. The only ones that visited it during the winter and early spring were the English sparrows. About the first of April the juncos began feeding at it, and after that other birds came, nearly all sparrows.

We spent a good deal of time watching them. Sometimes there would be as many as seven or eight different kinds on it at the same time. The following fed at the table: chipping sparrow, fox sparrow, Harris's sparrow, song sparrow, white-throated sparrow, white-crowned sparrow, junco, English sparrow, robin, blackbird, and a small sparrow of whose identity I am not sure. It was a great pleasure to watch them. March 27th we saw a freak junco with a lot of other juncos. It had a lot of white feathers on its back mixed in with the slaty gray ones. Otherwise it was like the others.

Mrs. G. F. Clapp,
Hayward, Wis.

RED HEADED WOODPECKER
(Melanerpes erythrocephalus).
Life-size.

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RED-HEADED WOODPECKER.

Common summer resident, frequently remains all winter; sexes alike; length nine and three-fourths inches; nest excavated to a depth of eight to twenty-four inches, usually in a dead tree; eggs, four to seven; note—a tree-toad like croak.

What a fine fellow he is! How strikingly the brilliant red of the head and neck contrasts with the black of the back and wings and the white of the underparts. How easy it is to distinguish this *red-headed* drummer from all other members of his family. To be sure, they all have some red on the head, at least the males have, but it is *on the head* not all over head, neck, and upper breast, an unbroken mass of red as in this one. In the case of the adult flickers, male and female have the scarlet patch on the *back of the head.* The red-bellied woodpeckers both have the crimson patch on *the back of the head and nape* and in the male, the crown is crimson also. In the sapsucker, both *crowns* are red, and in the male, the throat is also red. In the case of the hairy and downy woodpeckers, the males only have a narrow crescent of bright red on the back of the head. How fine it would be if the red-head were red, white, and blue instead of red white and black! Then he would be our flag-bird instead of the German flag-bird as the German children often call him.

The red-headed woodpecker is not only a bird of striking appearance; he is a bird of character, though not of a particularly good character always. Many of the interesting things about him are associated with his food and the way he gets it. We know that his name is an indication of his trade; we expect to see him dig into the wood of a decaying, grub-infested tree, and, with his barbed tongue, stab and pull forth the destructive larva. His whole make-up suggests this sort of hunting and nothing else. It is therefore a surprise to find that this woodpecker, like the flicker and sapsucker,[1] has in a measure changed his manner of living. According to Weed and Dearborn,[2] "About half the food taken by this species is animal and half is vegetable." Of the animal half, about two thirds are made up of beetles. This leaves really less than one-sixth of his food to be dug from the bark and wood of trees. In obtaining his beetles and some other insects, our red-head seems to have taken les-

BARBED TONGUE OF RED-HEADED WOODPECKER.
After Lucas.

[1] Wisconsin Bird-Study Bulletin, 1906, p. 20.
[2] Birds in Their Relation to Man, p. 187.

sons from the pewee, kingbird, and redstart, for he is an expert fly-catcher. Like those birds, he takes up a position on a fence stake or limb and darts up into the air to snap up passing insects with unerring aim.

But where does he go for the vegetable half of his diet? Evidently he likes variety, for his excursions take him to the cornfield, the woods, especially the beech woods, the berry patch, both cultivated and wild, the vineyard, garden, and orchard. He is fond of green peas and corn both green and ripe. The green sweet-corn he eats in the approved fashion, from the cob, the ripe corn he carries away, and, like others of his family, hides it in crevices of bark, fence-rails, posts and the like, and even in holes.

He is fonder still of beechnuts and will brave the rigors of a northern winter any time if he finds a locality where they are abundant.

He is also fond of raspberries, blackberries, strawberries, grapes, and other cultivated and wild fruits.

The farmer complains because this jolly marauder samples the ripening peaches, pears, and apples, while from the orange groves of the south comes the report that he is an equally good judge of a luscious orange. The large fruits he naturally eats on the spot, but the cherries and berries he perfers to carry away.

Mr. Leander S. Keyser, while strolling one day, watched a redhead that was making off with a cherry as ruddy as his own crown. "He alighted on a stake of the meadow fence, where he seemed to place the cherry in a sort of crevice, and then sip from it in a dainty, half-caressing way. . . . My curiosity being excited, I eyed him a while, and then drove him from his menu. There in a small pocket of the fence-stake, apparently hollowed out, at least partially, by the bird himself, lay the cherry, its rind punctured in several places where the diner-out had thrust in his bill to sip the juicy pulp underneath. The crevice had a rank odor of cherries dried in the sun, a proof that it had been used as a dining-table for some time. The legs and wings of several kinds of insects were also strewn about. Since that day I have found many of these pockets in fence-stakes, posts, dead tree-boles, and old stumps where woodpeckers had placed their dainties to be eaten at their convenience."[1]

We would prefer to draw the mantle of charity over the rest of this bird's record, but fairness compels us to add one more item. We could forgive him for his depredations in garden and orchard, but not for his plundering the nests of other birds for the purpose of devouring both eggs and young. When we take this into consideration, we must agree with Major Bendire that "He is unquestionably the most disreputable representative of this family."[2]

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[1] In Bird Land, p. 37.
[2] Life Histories of North American Birds, p. 107.

WILD CHICKADEE FEEDING FROM THE LIPS OF MR. ERNEST HAROLD BAYNES, MERIDEN, N. H.

Photographed by Louise Birt Baynes.
Courtesy of Mr. Baynes.

CHICKADEE, BLACK-CAPPED CHICKADEE.

The commonest winter bird in Wisconsin; found generally throughout the state, usually resident where found; sexes alike; length five inches; nest in holes in trees and stumps, of moss, grass, feathers, and plant down; eggs five to eight; song the well known chick-a-dee-dee.

The chickadee is the jolliest, most companiable bird in the State. His fearlessness, innocence or curiosity, or a combination of all three perhaps, leads him to come into closer and more friendly relationship with man than does any other of our birds. The robin may, by dint of much coaxing, be brought to accept a worm at a distance of three or four feet, but he advances cautiously, one little run after another, with a pause after each and an apparent weighing of the chances of his getting the very tempting meal for his youngsters and of escaping safely with the prize. Not so the chickadee, his friendliness is agressive, he makes advances.

The lonely chopper in the woods, eating his dinner on a fallen tree-trunk, welcomes the merry chickadee who approaches unhesitatingly for a share of the lunch. At the bird lunch-counter, he is a frequent visitor and may even be induced to feed from the hand of the watcher at the window. What could be more charming than an experience like the one illustrated in the picture! To have a friendly bird eat with you on a log is fine; to have one eat from your hand shows greater confidence and is finer, but to have one share the same mouthful is to feel that there is one wild creature, at least, that has not learned the human form to be danger personified, and is the finest of all. Nor is it alone in the winter that chickadee shows his interest in humanity. He has a broader interest than a tolerance of man for the sake of the food he offers. In the summer time, even when providing for the wants of a large and growing family, he is cheerfully willing to answer the call of the wanderer in the woods.

Besides the regular song, chickadee has a short call note, sometimes of two and sometimes of three syllables, something like keé-deè or keé-dè-dè. From the resemblance of this call note to the note of the phoebe, many a report has been made of observations of the phoebe when that petulant voiced flycatcher has been as far away as the Gulf States or Mexico.

This call note whistled in the woods is quite certain to bring the chickadees about the whistler if they are within hearing. They fly about him in the nearby trees and bushes chipping and answering the call as though they were investigating the thing that can make a noise like a chickadee and yet is not a chickadee. Their curiosity is soon satisfied; away they go and in a little while are lost in the woods.

Two summers ago, the writers had an interesting experience with a

family of chickadees. We had been birding in the thick woods of the sand dunes of western Michigan, opposite Sheboygan As we approached the house on our return one day, we heard chickadees in a clump of low trees. Fortunately a ladder was already leaning up into the trees. It was an easy matter therefore to slip up the ladder with the camera. In a minute or two the photographer was in the midst of a family of chickadees. Nothing could have been more beautiful or desirable than the groups of twos and threes in which they arranged themselves. Not only their charming attitudes of interest or curiosity, but their black caps and throats set off so strikingly by the white cheeks led the photographer to exult in advance over the new pictures that were to be added to the chickadee gallery. The opening and arranging of the camera was accomplished without causing alarm, the groups continued to form, break up and re-form, but the photographer was in despair; the shortest focus was five feet, the birds were less than four feet away; as he backed awkwardly away through the badly arranged branches, the chickadees maintained their friendly interest by approaching; many adjustments were attempted, but, before a successful snapshot was secured, two birds that we took to be the parents, flew into the group, chipped a few expressions of parental advice, perhaps, and the whole party flitted off into the woods. Only two pictures were secured. They are in the memories of the two bird hunters and can not be reproduced with any commendable degree of accuracy.

It is the fashion in some quarters to hang out of the window a small bag, made of some loose or open material, filled with crumbs, nut meats, chopped suet and the like. It is said to be great fun to see the chickadees alight on the bag, and, right side up, or up side down, work to get the bits of food through the holes in the bag.[1]

Interesting as the chickadee is for his friendliness and sprightly ways, he has another interest to the farmer and fruit grower, especially so if that worthy member of the community be an "up-to-date" one, and has learned that the birds from the "Co." of his firm. The chickadee seems to find no difficulty in managing to live, even through the coldest winters, on the insect eggs and larvae found hidden away in the crevices of the bark of the trees. For instance, four chickadees were found to have eaten 1,028 eggs of the fall canker-worm moth. Four other chickadees were found to have eaten 105 full grown female spring canker-worm moths. Now as each of these moths contained at least 185 eggs, that would make a total of 19,425 eggs of these very destructive moths eaten at one meal by four chickadees. No wonder that Mr. Forbush, by whom the above facts are given, regards the chickadee "as the best friend the farmer has."[2]

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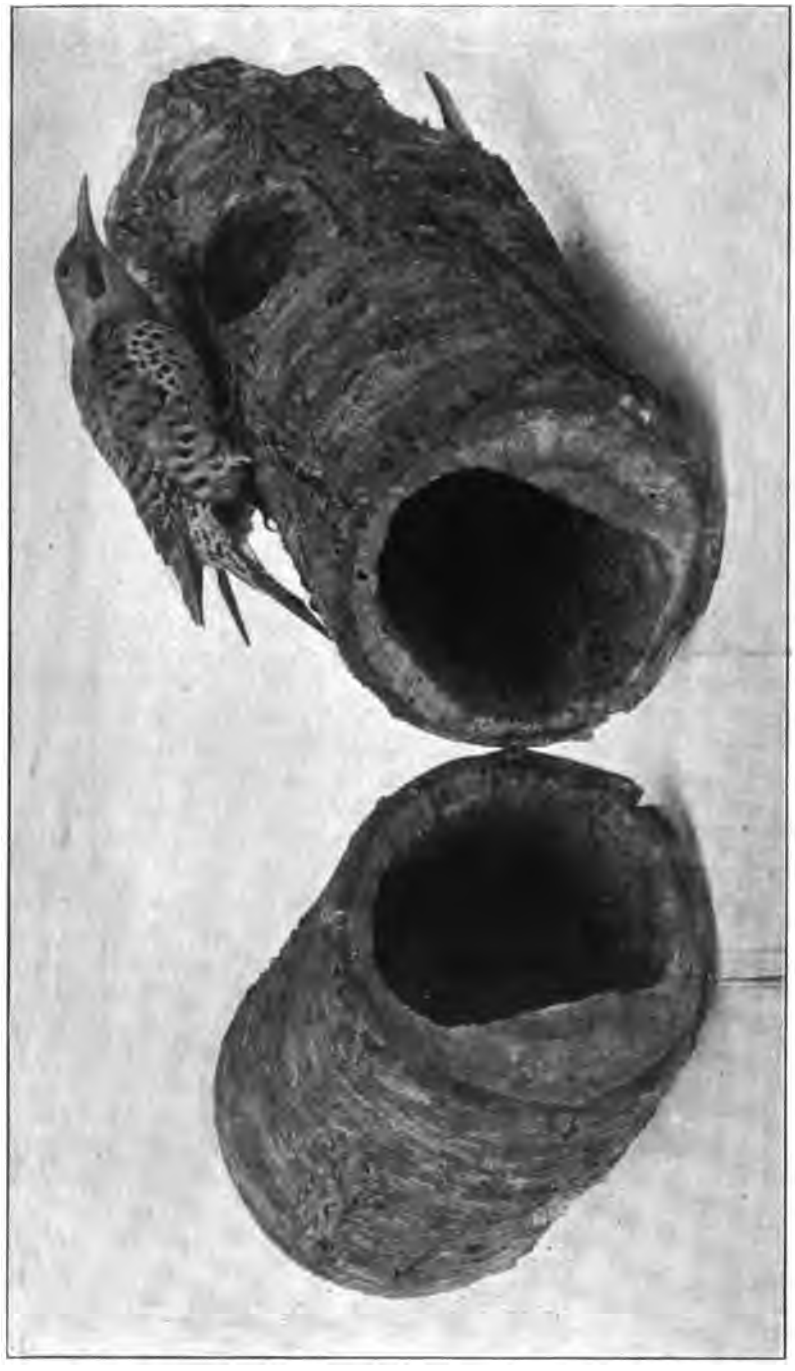
[1] See Bradford Torrey's Clerk of the Woods, p. 206.

[2] The Economic Value of Birds to the State. F. M. Chapman. Forest, Fish, and Game Commission, New York.



FLICKER AND NEST.
From Specimen in the Collection of the Milwaukee Normal School.

FLICKER, YELLOW-HAMMER, HIGH-HOLE.

Common; sexes similar, the female lacks the black streaks on the sides of the throat; length twelve inches; nest a deep hole[1] *excavated in a dead tree or stub, with no lining save a cushion of fine chips in the bottom; eggs five to nine, usually six; note a loud and clear wick, wick, wick, or wicker, wicker, wicker, or yucker, yucker, etc.*

A bird with so many notes and other accomplishments as the flicker is certain to have many human admirers and also many names.

When wakened in the early morning by his loud drumming on the ridge-board, chimney cap or cornice and then hearing his wicker, wicker, how easy it is to imagine that he is calling to you to wake-up, wake-up, or that he is saying flicker, or wicker, or again yucker or rucker. All of these words have come to be his names in some part of the country. Then, too, there are his bright colors, the golden yellow lining of wings and tail and the yellow quills of wing and tail feathers. No wonder that he is called the golden-winged woodpecker, golden-shafted woodpecker, yellow-shafted woodpecker, yellow-hammer. This last name refers also to his habit of drumming on some dry, resonant limb. Usually the flicker digs his nest hole fifteen feet or less from the ground, but occasionally he goes as high as fifty or sixty feet. How natural therefore to call him the high-hole or high-holer or high-holder.

Being a woodpecker, we naturally expect to find him working at his trade on the trees, but, how common it is to see this one on the ground instead, more like a pigeon. His size, too, is nearly that of the pigeon and for these reasons he is known to many as the pigeon woodpecker. But we can not study all of his names, for he has nearly forty of them.

Just above, we noted the flicker's habit of feeding upon the ground like a pigeon.

If you watch him, you may notice that his bill is covered with bits of soil. Evidently he has been digging for something to eat. Examinations of the food found in the stomachs of flickers show what he is after. Earthworms and grubs are much to his liking and he has learned how to find them, but, as already explained in the story of the sapsucker,[2] the flicker is the greatest ant eater among our birds. That is the chief reason why he is on the ground so much. He stirs up the ant hill with his bill and picks up the ants with the sticky, brushy tip of his tongue.

Professor Beal[3] found over 3,000 ants in the stomach of each of two

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[1] The hole shown in the illustration is 15½ inches deep.
[2] Wisconsin Bird Study Bulletin, 1906, p. 20.
[3] The Economic Value of Birds to the State, p. 33.

flickers. Ants form forty-three per cent. of the flicker's food. That is almost half of it. The wheat farmers will be glad to learn that the flicker is also fond of chinch bugs, for Mr. Bruner found nearly a thousand of them in the stomach of a flicker that was killed near Lincoln, Nebraska.[1]

But not only do the flickers make their own meals off of ants and chinch bugs, they also feed them to the nestlings. How can they do it? Simply by swallowing a great number of them, then going to the nest and "unswallowing" the softened food into the throats of the little ones.

Did you ever have the peculiar experience of approaching close to a flicker's nest while the young were in it? Many a boy has done so and beaten a hasty retreat. Why? Because he thought he had made a serious mistake and was about to investigate the home of a swarm of bees instead of the nest of a bird. The young flickers make a loud hissing noise that sounds so much like the buzzing of angry bees that even one who knows about it is very likely to be startled in spite of himself.[2]

By glancing at the tables of Wisconsin reports on the back of the book, it will be seen that the flicker is one of the early spring arrivals. About the twenty-third of March, not many days after the arrival of the robin and bluebird, it is well to be on the watch for this gaily marked woodpecker. In fact it would be well to be on the watch as early as the middle of the month.

The flicker is an easy mark. Note his large size, his wavy flight, like that of the goldfinch, only the waves are longer. If he chances to fly from you, note the white patch on the rump and watch for the glint of the golden lining of the wings. Ah, he alights on the trunk of a tree—woodpecker like; now you can see the large scarlet patch on the back of the head. As he sidles around the tree you can see the large, black polka dots on his sides and the big black crescent on his breast.

You may see two of the flickers on the tree. Are they playing tag or peek-a-boo? It seems like a combination of those and "pussy-wants-a-corner." How they bow and bob up and down, now scrambling around the tree, now peeking out to see if the other is coming, then off they go to another tree and back again, and the whole interesting show is given over again and again.

When the mating is over, they set to work to make ready the nest and get the housekeeping started. The illustration may give some idea of the amount of digging they do before the nest is completed. This one is in the stub of an old cherry tree. The entrance is near the bird, the bottom of the nest is in the second piece of the trunk.

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[1] Chapman, The Economic Value of Birds to the State, p. 33.
[2] W. L. Finley, American Birds, p. 29.

SONG SPARROW.

Photographed from life by Chas. H. Tolman, Portland, Me., by whose courtesy it is here published.

Song Sparrow.

Common; sexes alike; length six and three-tenths inches; nest usually on the ground, of coarse grasses, rootlets, leaves, lined with similar but finer material; eggs four or five; song a short, sweet melody; call note a loud, sharp chip.

Although this hardy little songster is by no means confined in his selection of a domicile to the vicinity of water, if you would find him with the least difficulty or in the greatest numbers, you will do well to seek him in the neighborhood of pond or stream or of marsh land with its encircling clumps of convenient willows and its straggling rim of fencing. Here, ere half the blustering days of March have blown by and before the ice has cleared from the ditches, you may hear again the cheery song of some of his tribe who have arrived a few days in advance of the main body to spy out the land, perhaps, or to take possession of the old familiar places. Here they seem to prefer to stay at first; later, they seek the uplands and venture about the abodes of men.

Unlike the chickadee, wren, or even the chipping sparrow, the song sparrow does not acknowledge his human neighbor. He may live near him but not with him. He makes no advances beyond accepting occasionally the bounty provided for his kind on the birds' lunch counter through the meager days of March and April. We wish it were otherwise, but the sympathy and appreciation are only on the side of man.

The sparrow is a member of the largest and one of the most successful families of birds, the finch family. Among his relatives are the grosbeaks and finches. Here, nature was lavish with color as the cardinal, rose-breasted grosbeak, purple finch and goldfinch show; but when it comes to the sparrows, the bright colors seem to have given out. Mr. Chapman[1] explains that the former live more generally in the trees while "the brown, streaked sparrows are, to a large extent, field-or plain-inhabiting, and their neutral colors are therefore a means of protection in the exposed situations they inhabit." The inference seems to be that the tree-inhabiting birds are exposed to fewer dangers than the ground builders—and may, therefore, take more chances in the wearing of gaudy clothing, though even here, the female, the nest tender, is very unpretentious and sparrow-like in her mode of dress.

Our song sparrow, being a ground builder, though he sometimes builds in low bushes, follows the style and has a dress that matches finely the grass, old leaves, earth, dead twigs and the like that form the surroundings of the nest. He is just sparrow-colored, the under parts are light, but heavily streaked with black and dark brown. Fortunately for the bird student these dashes run together. on the middle of the breast, into

[1] Hand Book of Birds, p. 271.

a conspicuous blotch; and at the corners of the mouth into conspicuous streaks that extend down the sides of the throat. These three marks are the quickest and surest means of identification. There are, to be sure, grayish lines running through the middle and sides of the red-brown crown, but these are more likely to be noticed after you have learned your bird than as a means of knowing it.

With such a modest dress, with no bright markings to suggest a name, his admirers have, nevertheless, been at no loss for a very fitting one. Handsome is that handsome does, and he does one thing extremely well. He sings.

In the bleak days of February, and March, he greets the blizzard with a song. In early April he is full of song, but as April melts into May and May into June, with mating and nesting going on, he is in an ecstasy of delight. He is original, for though he retains the family tune, he sings it with many variations. "Fifteen varieties of its song have been noted in one week, and the same individual often has a number of tunes in his repertoire."[1]

Mr. Abbott, in his notes on this plainly clad sparrow, says that he proclaims himself as "a good Pres-pres-pres-pres-by-té-rian."[2] Thoreau heard in the more customary song, "Olit, olit, olit—chip, chip, chip, che-char,—che-wis, wis, wis!" and in one of the variations, "Maids, maids, maids, hang on your teakettle-ettle-ettle."[3]

"He comes in March, when winds are strong,
And snow returns to hide the earth;
But still he warms his heart with mirth,
And waits for May. He lingers long
While flowers fade; and every day
Repeats his small, contented lay;
As if to say, we need not fear
The season's change, if love is here
With 'sweet—sweet—sweet—very merry cheer.'

He does not wear a Joseph's coat
Of many colors, smart and gay;
His suit is Quaker brown and gray,
With darker patches at his throat.
And yet of all the well-dressed throng
Not one can sing so brave a song.
It makes the pride of looks appear
A vain and foolish thing, to hear
His 'sweet—sweet—sweet—very merry cheer.'"
—*From the Song Sparrow, by Henry Van Dyke.*

[1] Florence A. Merlam (Mrs. F. M. Bailey), Birds of Village and Field, p. 119.
[2] Charles C. Abbott, The Birds About Us, p. 102.
[3] Mabel Osgood Wright in Birdcraft, p. 156.

MEADOWLARK.
(Sturnella magna)

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MEADOWLARK.

Very common in Wisconsin; occasionally remains through the winter; sexes alike; length ten and three-fourths inches; nest on the ground, of grass, sometimes arched over; eggs four to six; song a clear, ringing whistle.

The meadowlarks are early spring migrants. They come by the calendar. Theoretically the winter is over and gone, but actually the February snowdrifts are generously replenished by the icy winds of March. Reluctant winter bids a slow farewell, but wind and snow do not daunt our hardy harbingers of the real spring.

Whether it be fair or foul, go out into the open by the fifteenth day of March. You may be a day or two too late or a day or two too early. Twelve observers out of twenty-seven, as shown by the tables at the back of the book, reported seeing the meadowlark between the fifteenth and the eighteenth in the spring of 1907. From some fence post, tree or telegraph wire, you may hear the clear, cheering whistle, *here, mead-ow-lark, mead-ow-lark.* You do not need to see him to know that he has come. He proclaims it again and again by his *here, mead-ow-lark, mead-ow-lark,* so plainly that you may know it though he be half a mile away.

At this early season you are more likely to see him on some perch well above the ground; later, his song will come from the ground itself and you will have more difficulty in getting a good view of him. In either case, however, you are quite certain to be successful, for our meadowlark is not very timid. There he is on the tip end of that fence-stake. He has turned and is facing us. There goes his *cheer, mead-ow-lark, mead-ow-lark.* We can get much nearer; now, you can see his plump, yellow throat and breast; what a beautiful, brilliant yellow it is! And, like the flicker, he wears a jet black bib. What an oddly shaped head he has. He evidently belongs to the tribe of flatheads. He has no forehead; his bill is almost on a line with the top of his head.

There is a light streak through the middle of his crown, and a yellow one over the eye. Ah, I think we are getting too near for his comfort; like most of the birds he has turned his back on us. Now notice, before he flies, the dark, brown and black mixture of the back. There he goes, that's fine; it gives us the two features by which you may easily know him on the wing. See the spread tail with the white feathers at the sides? It is as good a mark as the white rump of the flicker. And do you notice his peculiar flight? low and gliding, now a few quick wingbeats, now a smooth sailing on outspread wings?

Down he goes into the old grass. "Spring o' the y-e-a-r, spring o' the y-e-a-r." Thank you, Mr. Meadowlark, for the fine exhibition of song and gown.

Like the song sparrow, this is a bird of but one name. His home and his song are his characteristics that appeal to man. Really, he is not a lark at all, but is a very near relative of the blackbirds and orioles.

The nest of the meadowlark is one of the most difficult to find. It is placed in a shallow hole, either natural or made by the birds, at the base of a tall clump of grass. The grass is often pulled down and interlaced over the nest, dome like, in such a way as to completely conceal it. In addition to this, the entrance to the nest is sometimes built in the form of a tunnel from a foot and a half to three feet long. Perhaps it is this good workmanship that defeats the cowbird. Certain it is that the meadowlark does not often suffer from the imposition of its black-feathered relative.[1]

The meadow lark is, like Bobwhite, a little too large for his own good. There is a class of people whose greed for something to eat is held in check by a sort of self respect that demands that the game, bird or fish, shall be of a respectable size. The meadowlark and the fingerling are, with most people, below the accepted standard, but still dangerously near it. What wonder, then, that some of the small souled of our people kill the meadowlark for food. Of all people, the farmer should be the last to sanction such destruction and the first to take steps to prevent it, for, among all the birds of the farm, there is not one that is more helpful. Taking the whole year through, 73% of its food is insects, 15% grain, and 12% weed seeds. Curiously enough, in *January* 25% of its food is *insects* and 75% *grain;* in *February* 25% *is grain* and 75% *weed seeds*, insects none, while in *July* and *August,* the *harvest months, insects* form 98%, *grain none, weed seeds* 2%.

If the farmer knows his insect enemies he will be interested in the following partial list[2] of them eaten by the meadowlark: grasshoppers and cricktets—25% of its food,—weevil, curculio, clover weevil, billbug, ten kinds of beetles, including the flea-beetle, May-beetle, click-beetle; moths, cutworms, armyworms, chinch bugs, tree-hoppers, ants, and plant-lice.

If this isn't enough, add the seeds of ragweed, panic grass, pigeon grass, smart weed, and black mustard and we have a good case for this bright-breasted, cheery-voiced helper.

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[1] Bendiro, Life Histories of North American Birds, p. 460.

[2] Educational Leaflet No. 3, National Committee of Audubon Societies. William Dutcher, Sec'y, New York.

Downy Woodpecker and Part of Nest.

From Specimen in the Collection of the Milwaukee Normal School.

DOWNY WOODPECKER.

Common resident; sexes similar, male with narrow scarlet band on back of head, wanting in female; length six and eight-tenths inches; nest a foot or more deep excavated in a dead or decaying tree, lined only with fine chips; eggs four to six; note a sharp, short "ick" at times given in a quick succession forming a sort of trill.

It is five minutes after seven, February eighth. In a few minutes a soiled, male downy woodpecker will alight on the maple tree a few yards from the dining room window and proceed with much bobbing to dig his breakfast from the piece of suet tacked upon the tree trunk. He is very regular about this early meal. The light is probably his rising bell, for when the days were shorter, he did not breakfast till eight o'clock. Being one of those fortunate individuals who get out of bed already dressed for the day, he doubtless looks after something to eat the first thing. February third, he began his breakfast at thirteen minutes after seven; February 4th, at twelve minutes after; February 5th, that very gloomy, stormy morning, at forty-two minutes after, but it was not the storm that delayed him for it was at its worst when he came. February 6th, he again came at twelve minutes after; February 7th, at eight minutes after. Ah! there he is now. As usual, he strikes the tree above the suet. Down he goes, one, two, three, four little bobbing hitches. Now he is too low, but up he bobs and is at one side of the attractive fat. It is a cold morning and one would think that he would make haste to begin his meal, but he dallies, he throws his head well back, hitches to left, to right, as if to see whether he may eat undisturbed; but, evidently not satisfied, he hitches in quick, nervous little side-steps farther and farther to the right, and away from the suet till he has made the circle of the trunk. Now he is close to the suet, but even yet he must bob to right and left a time or two. Now he thrusts his pick into the frozen suet. Rat-tat-tat-tat, off comes a tiny bit that disappears in a flash. Rat-tat-tat-tat, rat-tat-tat-tat, first on one side, then on another of a little portion not as large as the head of a tack. But it is not loosened, and at it he goes again, first on one side, then on another. He has learned to use the pick with good aim and in a methodical way. Now the bit is cut loose and pried apart from the mass. It quickly follows number one and he starts on another bit. Sometimes little chips of suet are loosened as he digs at a larger piece; these are eaten as they are made. If larger than a pea, he carries the bit up to a crotch and breaks it up. As he becomes interested in loosening the bits of suet, he seems less anxious about his surroundings and gives up craning his neck and side-stepping. Now he is devoting his whole at-

tention to his breakfast. He sits closer to the tree this cold morning than usual, but he does not stay long, not over five minutes, usually less, nor has he eaten much; but up he bobs into the branches, picking aimlessly, it appears, here and there as he goes. Evidently he is not a pig, and the presence of a large store of desirable food can not tempt him to linger long at the lunch counter. If a bird's mind finds expression in his actions, then our downy is happy and contented. Every movement shows it. He casts no longing glances back at the suet, not a particle of reluctance is shown as he leaves it. Away he goes with that wave-like woodpecker flight to yonder elm. It is now twenty-five minutes past seven; another downy is at the suet. The absence of the scarlet band on the back of the head makes it clear that it is lady downy. She is an irregular visitor and misses many days.

The male makes as many as ten visits to the tree at irregular intervals during the day. The last meal is taken a few minutes before five o'clock. Two other downies come occasionally to the suet, a bright clean male and a somewhat dingy female. The latter is easily recognized because her right leg is crippled. The toes all seem to turn the wrong way. The leg hangs loosely at the side. The white male must live in the country away from the coal smoke. The white patches on the sides of the crown, middle of the back, wing feathers, and the whole under parts are bright, clean white. Nor do we have to look twice for the red on the head.

The downy woodpecker is one of the hardiest of our North American birds and is found as a resident from Florida to northern Alaska.

Gleaning their food, as these birds do, from the bark of trees, especially of the trees of our orchards in which they prefer to live, they are of great service to man.

The late Professor King of the University of Wisconsin was one of the first to make a study of the food habits of the downy and to urge its protection for the good that it does on the wild and cultivated trees.

Hairy Woodpecker.

To know the downy woodpecker is to know his larger relative—the hairy woodpecker. So alike are they in markings that one has to study very closely to find any difference. Before you give it up, look at the under side of the white tail feathers of the downy. They are barred with black, while those of the hairy are not. For field work, size alone is a sufficient guide. If your bird is one of the two and shorter than your hand, it is downy. If the bird would reach from your finger tips well down upon the wrist, it is the hairy woodpecker.

WHITE-BREASTED NUTHATCH.
(Sitta carolinensis).
Life-size.

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WHITE-BREASTED NUTHATCH.

Common resident; sexes similar, black of crown, nape and upper back replaced by bluish gray in the female; length six inches; nest of yellow in the female; length five inches; nest, fibers of grass and five to nine; note a nasal ank, ank.

The white-breasted nuthatch, though a resident of the state, appeals to us much more in winter than in summer. Then he is one of a small company, and comes freely when we are longing for bird visitors.

Like the chickadee and the downy, he is fond of suet and will make frequent visits to obtain it; but if you wish to see him at his best, spread on the lunch counter a feast of small meat scraps, bits of suet, grains of corn or cracked nuts. Being a *nuthatch,* it might be supposed that he would do his own cracking, and so he would, if supplied with beechnuts, but we have never seen him make any attempt to *hatch* a hickory nut.

With the suet fastened to a tree, the observer has at least one advantage,—the nuthatch must remain till he has finished his meal, and must come again when he wishes more, but it isn't the most interesting way. The nuthatch, like the hairy and red-headed woodpeckers and the bluejay, is provident. In a time of plenty he takes thought for the morrow and tucks away the surplus in tree crotches, crevices on the tree-trunks, and in holes. These hidden bits he hunts out in time of need. Incidentally he helps the English sparrows, for they reap a small harvest by hunting over the tree-crotches in the neighborhood of the feeding board. The tiny bits of food he will eat on the feeding board, but anything as large as a split pea must be carried to a tree where it is placed in a little hollow of the bark, usually in a crotch, and broken into suitable bits by that sharp strong bill, or stored for future use.

On the feeding table, the characters of downy and the nuthatch are in strong contrast. If it be supplied with a chunk of suet and cracked nuts, downy digs his meal from the suet and ignores the nuts, the nuthatch ignores the suet and begins to carry away the nuts. He does not seem to be able to stop, either, till the last piece is transferred to a hiding place. On one occasion 97 visits were made to the writers' table between seven o'clock in the morning and four in the afternoon. At another time a nuthatch carried away a small handful of cracked hickory nuts in an hour. The nuthatch is more expressive than downy, both in his voice and in his attitudes. His "ank, ank" often tells us of his presence while the "quick" of the downy is seldom heard through the winter.

He *poses* as though meditating or listening as shown in the illustration, *head downward,* sometimes with the body thrown out farther from the tree, and head back. He holds this position for perhaps a minute. He always feeds on the tree head downward, while downy is as particular to be head upward.

Perhaps this difference of position on the tree has to do with the difference in the tails of the two families. The nuthatches have soft tailfeathers, the woodpeckers and brown creeper harsh ones. The downy makes a hammer of his head, the neck forming the handle. The nuthatch makes a hammer of his body, his legs being the handle. He thrusts his body at the nut or suet; this may explain why he stands above his work. It is more effective to throw the body downward than upward. The nuthatch is more curious, too, than downy. He investigates all of the bird houses, goes in again and again. If he can not get in, as in the case of the wren house, he proceeds to enlarge the hole until he can get in. Last winter they converted one of our wren-houses into an English sparrow house in this way.

When downy drops a bit of suet, he doesn't mind it. When the nuthatch drops a bit he misses it and goes after it.

It was our good fortune to be watching a nuthatch who had carried a piece of nut-meat up into an elm. He was at least fourteen feet from the ground, which was covered with a deep, light snow. While working with the nut-meat, it slipped away and fell into the snow. There was no sign of the lost bit except the little hole made by its falling, for it had gone down out of sight. The bird either watched it fall and saw where it struck or he knew a thing or two, for he flew down directly to the hole, dug out the nut-meat and returned to the crotch.

The illustration is intended perhaps for the female; her head, nape, and upper back are blue-gray, while in the male they are a shiny black. Like other tree gleaners, the nuthatches are very desirable birds about our homes.

The Red-breasted Nuthatch.

The red-breasted nuthatch is common during the spring and fall migrations. It is nearly an inch and a half shorter than the white-breasted, but resembles it in shape, markings and behavior. The white-breasted is white-cheeked also, while the red-breasted has a black line through the eye. They are so alike that to know one is to be easily able to recognize the other. The red-breasted nuthatch does not stay with us during the summer.

FROM COL. CHI. ACAD. SCIENCES.

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AMERICAN REDSTART.
(Setophaga ruticilla).
Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO

AMERICAN REDSTART.

A summer resident, very common during the migration in spring and fall; sexes unlike, the orange of the male replaced by pale, light yellow in the female; length five inches; nest, fibers of grass and bark, plant down, lined with fine grass and hair; eggs three to five.

The redstart is a member of the family of wood warblers, a family second in size only to the finches.[1] Thirty-seven of the warbler family are known in Wisconsin, to forty-three of the finch family.[2] Beyond numbers we look in vain for evidences of similarity. The finches in general live on or close to the ground, probably because they are seed eaters and prefer to live as close as may be to their base of supplies. For a similar reason the warblers in general, being insect eating birds, take to the trees.

The sparrows are dull, sombre colored birds, they are "of the earth earthy," as shown by their names, *slate-colored, clay-colored.* The warblers reflect the colors of the sunset sky and the fact finds expression in the names of the *cerulean, redstart yellow, golden-winged, orange crowned,* and *black-throated blue.* No wonder the Cubans call them *"mariposas,"* the butterflies. Of this distinguished family, the redstart is one of the most beautiful and is so strikingly marked, that one can not fail to identify it; as Mrs. Bailey says,[3] "It can never be mistaken for any of its family, which is a great and shining virtue to be possessed by a warbler."

It is the most nearly red of any of the warblers that visit Wisconsin. The illustration gives us a good idea of the coloring, except that the orange is a redder orange, and the black is a beautiful, glossy, jet black. The illustration is a good one, yet, however good, no colored plate can reproduce the subtle qualities of life. In this figure, the position shows alertness, the eye has caught the tempting moth, the wings begin to respond, the tail is partly spread, you can almost see him dart through the air, the taxidermist and artist have done their best; but the bird doesn't get the easy prey, it is only the suggestion of a spring, he is wired to the tree. How incomparably different in life! The wings and tail would have been spread and folded many times, the rejected wings of the moth would long since have fluttered aimlessly to earth, our redstart would have darted off, flycatcher-like, into the air in pursuit of passing insects.

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[1] See Wisconsin Bird-Study Bulletin, 1906, p. 13. The reference there made is to the sparrows only of the finch family.

[2] The Birds of Wisconsin, L. Kumlien, N. Hollister, Wisconsin Natural History Society, Milwaukee.

[3] Florence Merriam (Mrs. Bailey), Birds of Village and Field, p. 309.

We would have been given a beautiful exhibition of competitive skill in the use of wings. The little insect in its efforts to escape, darts in curves and zig-zags, "pigeon-wings" and "figures of eight," the relatively big redstart, by no means clumsy, as you might expect, when compared to a moth, follows his prey, darts, curves, turns graceful somersaults and pirouettes until a little snap of the bill tells that the chase is over and the warbler alights for a moment only to repeat the pretty show at sight of the first insect on the wing.

The female is even more nimble a performer than the male, and, seems to take great pleasure in flirting with her tail, which she opens and closes like a fan.

A truly beautiful family, this of the warblers. What the humming birds are to the American tropics, the warblers are to us. No words can paint the brilliancy and form of the hummers. Our little ruby-throat is only a suggestion of the possibilities of nature in the use of the gorget with its wondrous, metallic reflections, and his tail is a very common little affair, not even a suggestion of the tropic tail; and yet, with all this lavish use of color, and all the variation of tail feathers, the hummers leave one with the feeling that they are fantastic, bizarre, brilliantly overdone. We turn to the warblers with a sense of rest and comfort. Their beauty of form and color is a perennial pleasure. Happy they who have had the good fortune to come within their sphere of influence and can go forth in early May to enjoy their passing show.

BIRD OBSERVATIONS IN WISCONSIN.

On the accompanying two pages will be found tabulated the earliest dates in the spring on which some two hundred different species of birds make their appearance in different parts of Wisconsin, as observed by persons whose names are given in the table.

We learn from this table, for instance, that at Beloit the meadow lark was first seen March 27; at La Crosse, March 15th; at Eau Claire, April 6th; at Washburn, May 26th. If we are interested in any particular bird, then, we may learn from the table about when we may look for the arrival of that bird in the spring at our own locality. In determining this we should look in the table for the date of the earliest arrival of the bird in that locality which is nearest the place where our observations are made.

The table may also be used to help in determining the species of a bird which one desires to identify. Other uses which can be made of the table will readily suggest themselves to the thoughtful observer of birds.

	Washburn. Miss Anna	Hayward. Mrs. C. F. Clapp	Nashville. Marion Gregory	Menomonie. Mrs. C. F. Miles	River Falls. Prof. R. W. Wegner	Eau Claire. Clara I. McNown	Appleton. Mrs. Ch. Wille	Winneconne. H. P. Severson	Coleusville. Mrs. H. Day. Jennie Flower	La Crosse. Prof. J. H. Congdon	La Crosse. Mary A. Forbes	Berlin. Mrs. Ch. Hitchcock	Plymouth. Prof. F. Gaechter	Union Center. Mrs. Wm. Geo. C. Osborn	Kilbourn. Prof. & Mrs. C. W. Smith	Delton. Beulah Bassett	Baraboo. Mrs. W. F. Kelsey	Boscobel. Prof. A. L. Rhodes	Oconomowoc. Dr. Fred Rogers	Madison. Prof. R. H. Dennistoun	Milwaukee. Lillian M. Carter	Milwaukee. E. L. Hawkins	Milwaukee. Mrs. and Mrs. L. H. Mitchell	Milwaukee. Gertrude Rooney	Milwaukee. Mrs. J. Pulsifer Brown	Milwaukee. Bertha Olmstead	Whitewater. Mrs. E. L. Shutts	Edgerton. Constance Beckwith	Walworth. L. H. Ripley	Elkhorn. Miss Beckwith, S. F. Morris	Beloit. Mrs. P. B. Yates
1 Bittern, great Am.		5-22	3-9		5-7		7-17	4-11	6-19	4-24			5-26				5-19						4-15	5-5				4-23			
2 Blackbird, crow	5-30	3-25	5-4	3-18	3-21	3-23	3-21	3-17	3-19	3-20	4-23	3-17	3-17	4-7	3-22		3-26		3-18		3-27		3-21	3-21		5-12	3-28	3-18	3-21	3-17	3-15	3-20
red-winged	5-30	4-2		3-21	3-25	4-14	3-21	3-16	3-18	3-16	3-15	3-27	3-21	3-22	4-12	5-29	3-21	3-16	3-17	3-17	5-30		3-22	3-17	5-13		5-18	3-19	3-21	3-13	3-15	3-28
rusty	5-30						4-23	4-24	5-10	3-25		3-9	4-8	3-3	5-2		4-26	3-16					3-25	3-28			4-21	3-19	3-9	3-6	5-6
yellow-head								5-1		5-22	4-20	5-28											5-16	5-11							
5 Bluejay	Rec.	5-12	4-11	Rec.	3-1	3-4	1-1	Rec.	Rec.	Rec.		3-18	Rec.	Rec.	Rec.	Rec.	Rec.	Rec.			Rec.	Rec.	Rec.	Rec.	5-13		Rec.	Rec.	Rec.		Rec.	Rec.
6 Bobolink		5-15		5-13	5-13	5-16	5-13	5-9	5-20	5-11		5-12	5-7	4-21	5-18	5-31	5-14	5-10	5-18	5-8	5-19	5-7	5-30	5-15	5-17	5-18	4-23	5-12	5-2	5-9	5-19
7 Bob-white			Rec.	4-25		4-27			Rec.	Rec.	4-28			Rec.		4-5	Rec.	4-27									Rec.	3-22		2-21	5-19
8 Brown thrasher	5-26			5-11	5-13	5-12	4-7	5-10	5-11	5-3	4-8	5-15	5-4		5-22	5-30	5-2	5-13		5-12	5-4	5-7	5-5	5-4	4-25	5-1	3-24	4-13	4-25	3-17	5-9
9 Bunting, indigo				4-8	4-1	4-6	4-9	3-26	4-10	5-19	5-18	5-27	5-13		4-12		5-13	5-10				5-13	5-13	5-19		4-1	5-21	5-18	5-13	5-16	4-28
10 Canada jay			3-25																												
11 Catbird				5-13	5-12	5-12	5-14	5-14	5-11	5-12	4-28	5-12	5-4	4-25	5-13	5-2	5-13	5-14	5-16	5-12	5-12	5-13	5-12	5-12	5-12	5-12	4-23	5-15	5-12	5-14	5-16
12 Chickadee	5-30		3-9	4-22	3-1	3-4	1-1	Rec.	Rec.	Rec.		3-17	Rec.	Rec.	Rec.		Rec.	Rec.			3-3	3-25	12-16				Rec.	Rec.		4-22	Rec.
13 Chewink		5-15		5-11	5-7	7-8	5-18	5-5	5-6	5-3		5-6	3-26	4-21	5-19		4-28	5-9		5-5	4-23	4-18	5-5	5-6	4-25	5-2	4-23	5-18	3-26	4-27	4-Rec.
14 Coot, American							6-8			3-30							5-19	3-31					3-16								
15 Cormorant, double-crested										4-30																					
16 Cowbird	5-16	6-2		5-17		6-16	5-8	3-27	6-16	4-24		4-19	3-25	4-21	5-16	5-28	4-20	4-16	5-28	3-26	5-12	3-25	4-21		5-1	3-28	4-27		3-23	4-21	4-17
17 Creeper, brown	5-1		4-1	4-7	3-25	3-31	1-1	1-1	4-3	3-24	3-22	3-24	3-21	4-14	5-2		4-4	5-12			3-22	3-21	3-24			4-12	3-27	Rec.	3-18	3-15	3-21	Rec.
18 Crow	5-26	3-10	3-16	Rec.	3-1	3-1	1-1	Rec.	Rec.	Rec.		3-17	Rec.	Rec.	Rec.	Rec.	Rec.	Rec.			Rec.	Rec.	Rec.				Rec.	Rec.	Rec.		Rec.
19 Cross-bill, Amer. white-winged																	5-28			5-12											
20 Cuckoo, black-billed										6-6							4-13			4-27											
21 yellow-billed						5-26	6-16						6-5									5-15	5-14	5-13	5-10	5-18	5-21				
22 Dickcissel							6-7						7-7				5-15				5-30	5-13		5-15		5-13	5-21	5-18		5-14	
23 Duck, bufflehead												4-23	4-8				5-13													6-5	
24 golden-eye, Bar													4-8					3-24				3-21	3-1								
25																						3-22	3-1				3-26				
26 Merganser, Amer.												7-6									5-25	4-18				5-31	3-19				
27 hooded																						3-22									
28 red-breasted																							4-19								
29 Mallard										3-20								3-22				3-22									
30 old squaw																							3-24								
31 pin-tail													3-20																		
32 ruddy													4-21	4-28								3-27					3-19				
33 scaup, lesser										3-26			4-30									3-22	3-1				3-19				
34 teal, blue-winged										4-24								3-23				3-22					5-1				
35 green-winged																						3-17									
36 wood										4-5			4-23							5-19											
37 red-head										5-15																					
38 Dove, mourning				4-30	3-27	4-14		3-24	5-16	4-20		4-3	4-2	4-22	4-15	5-19	3-31	3-24	5-18		4-27	3-27	4-14			5-18	2-27	4-13		3-24	3-31
39 Finch, pine			3-28							5-27			4-7																		
purple				3-27	3-26	5-2	5-5	5-11	3-19	5-26			4-20				4-10			4-21	4-14	4-15	5-9	5-6		4-22	4-16			4-5	
40 Flycatcher, gt. crested				5-20				5-26		5-16		5-18	5-13	4-16			4-15					5-13	5-13	5-15	5-16	5-18	5-21		5-17	6-27	4-19
acadian													5-3										5-30								
kingbird	5-26	5-23		5-12	5-18	5-12	5-15	4-13	5-16	5-12		5-16	5-9	5-12	5-13	5-30	5-10	5-15			5-12	5-13	5-13	5-12		5-18	5-7	5-13	5-9	5-9	5-15
least				5-13			5-18		5-5	4-8		5-9	5-15	4-28			5-13				5-19	5-13	5-13	5-12		5-13	5-7		5-14	6-3	4-30
olive-sided				5-13						5-20																					
pewee				4-6	5-12	4-4	4-2	5-25	5-20	5-11		5-16	5-31	3-23	4-8	4-19	4-10	5-15	5-22		5-29	5-13	5-16	5-28	5-14	5-17	4-30		5-24	5-15	5-19
phoebe		4-20	3-28	3-25	3-23	4-10	3-28	3-17	3-24	3-25	4-1	3-25	3-21	4-21	4-2	4-15	3-20	5-9		3-19	3-27	3-25	3-23				3-27	3-26	3-22	3-19	3-24	3-31
Traill's							5-19										3-21						5-14					5-21			5-19
yellow-bellied					5-18					5-29	5-9	5-26	5-25								5-12	5-15	4-28	5-21							5-21
Gallinule, Florida										5-8		5-23										5-4	3-16							6-22	
Gnat-catcher, bl.-gray							5-19					5-16	5-8	4-28								5-13	5-11				5-7		5-14		
Goldfinch, Amer.		5-30		5-28	5-18	6-1	5-14	5-17	5-21	4-13	4-17	5-16	5-16	4-22	3-11		4-11	5-2			5-19	5-19	5-12	5-16	6-1	5-18	Rec.	5-17	4-23		5-15
Goose, Canada							3-23			3-24			3-12	3-17	3-25		3-24	3-23		3-9		3-22	3-18				2-27		3-17		3-12
Grebe, horned												5-16																			
pied-billed										3-30		4-21	3-21							4-20		3-22	4-20			5-20	3-26		4-11		5-14
Grosbeak, cardinal										5-18																					
blue																	6-31														
pine				3-19 3-28						2-20	4-27						4-6					7-17					2-1				
evening		5-13		4-28	3-7	3-2	1-1	5-6	4-29 5-19	5-18	4-3	5-16	3-23 3-30	4-7			3-14			3-3						5-12					
rose-breasted				5-21	5-12	5-12	5-18	5-19	5-6	5-11		5-12	5-12	5-5	5-11		5-11	5-1	5-18	5-18	5-19	5-17	5-12	5-16		5-17	5-7	5-19	5-14	5-13	5-10
Grouse, pinnated					3-23																										
ruffed			5-3			6-16				Rec.			Rec.	4-14	Rec.		4-21									6-20	Rec.				
Gull, herring	5-26				3-23		2-15	1-1		4-11		4-24	3-12	4-16						3-23	1-1	3-22	3-22			3-27	3-26				
Hawk, fish, osprey																						3-22									
marsh					3-25		5-8	4-14	5-20	3-30		5-12	3-21	4-21	5-11		4-20	3-20			3-16	3-27	4-13				6-4				5-9
pigeon				4-7			5-18															4-1	4-28								
red-shouldered													3-28										4-28								
red-tailed					3-16	4-9				4-13		3-28			5-11		3-27					3-25					5-28				5-9
rough-legged																		3-31													
sparrow				4-2			5-18	4-21		4-12			3-16	5-2			3-31	3-22			3-27	3-21	3-23				5-7				5-12
Heron, black-cr. night										5-9																					
great blue		4-20		4-9	3-25	7-24			6-19	4-2		5-16	3-21									3-22	3-3				5-7				
little green				5-21						4-2		5-10	5-13				5-31					5-15									
Hummingbird, ruby-throat				5-30	5-27	6-15	5-16	5-26	5-29	5-18		5-25	5-13	5-21	5-18	5-31	5-19		5-21		5-19	5-16	5-15	5-17		5-16	5-7		5-14	5-19	6-15
Junco, slate-colored		3-24	3-28	3-27	3-28	3-24	3-27	3-21	1-23	3-15	3-15	3-20	3-23	3-22	3-16	4-2	3-14	3-16	3-16	3-22	3-16	3-7	3-10			5-12	3-27		5-6	3-19	5-10
Killdeer					3-23	4-24	5-21	3-16		5-11		3-28	3-16	5-18	4-18		5-23			3-21		3-19	3-21	5-21			5-27	5-2	3-17	4-21	3-28
Kingfisher	5-26	4-20	5-4	5-11	3-23	4-7	5-18	5-1	4-14	3-30	5-12	4-23	3-22	3-22	5-16		3-31	4-2	3-26	3-26		3-17	3-28	5-11		6-26	3-26	5-3	4-4		6-6
Kinglet, golden-crowned				3-25	3-23	4-14	3-25	3-22	4-1	3-31	4-26	3-27	3-31	4-21		5-2	3-31	5-1		3-23	3-23	3-25	3-23		6-28	3-23	3-1	3-9	3-16	3-25	3-27
ruby-crowned		5-4	3-28	3-12	3-31	4-14	3-28	5-1	3-10	3-28	4-17	4-16	4-12	4-21	4-21	5-2	3-31	3-28			3-22	3-21	3-27		4-28	3-27	3-26	3-30	3-12	5-16	4-21
Lark, horned				3-12																											
prairie horned		2-16			3-12	7-12	3-21	2-24	4-3	2-17		2-25	3-1				3-6	4-27				3-22	3-17				3-1			3-18	Rec.
Loon	5-15											4-23	5-16									3-22	3-28				3-26				
Meadow lark	5-26			3-18	3-23	4-6	3-21	3-16	4-3	3-30	3-15	3-17	2-16	3-14	3-29	4-24	3-21	3-14	3-18	3-15	3-16	3-15	3-17			3-27	2-27	3-25	3-16	3-17	3-27
Nighthawk		3-25		5-30	5-30	5-27	5-28	5-25	5-20	5-7			5-13	5-16	5-15	5-4	5-16	5-26			5-28	5-13	5-26	5-16	6-5	6-21	4-7		3-14	4-2	3-27
Nuthatch, red-breasted				5-23		5-25	5-12	5-12		5-13		3-17	5-12	5-16		3-11				3-26		4-22	5-14	5-13		5-12	4-11	5-4	5-14	5-12	11 Rec.
white-breasted		4-17		3-15	3-1	3-1	1-1	Rec.	Rec.	Rec.	4-1	3-17	Rec.	Rec.	Rec.		Rec.				4-3	3-15	3-1		4-28	3-27	Rec.			Rec.	14 Rec.
Oriole, Baltimore	5-10		5-8	5-13	5-13	5-12	5-13	5-12	5-11	5-11	3-20	5-11	5-14	5-8	5-13		5-12	5-12	5-8	5-13	5-18	5-13	5-9	5-12	5-11	5-15	4-23	5-11	5-9	5-10	5-10
orchard							6-13			5-13	5-25		5-22		6-5		5-31					5-17					5-7		5-18	5-16	
Owl, barred										4-20			Rec.														4-18				
great-horned					4-11					3-24			3-17		Rec.		6-17					4-26									
long-eared										2-16																					
saw-whet				3-25																											
Screech	5-3						7-9						5-3													(7-31) (5-17)					
Snowy		5-4																									Rec.	5-14		3-29	
Pelican, white		5-4																3-26													
Plover, belted piping																															
semipalmated																															
Rail, King										5-7		5-6																			
Sora					4-28					4-27		5-12	5-14								5-28	5-4	5-11	5-20			5-28			5-14	3-20
Virginia										6-26							5-31														

Bird Observations in Wisconsin, 1907.

Compiled by I. N. Mitchell.

	Washburn. Tillie Dugan	Hayward. Mrs A.F. Clark	Nashville. Marian Gregory	Menomonie. Mrs C.F. Miles	River Falls. Prof. R.W. Magee	Eau Claire. Clara L. McKown	Appleton. Mrs C.H. Little	Winneconne. H.P. Sanderson	Galesville. Mrs H. Roy Jennings	LaCrosse. Prof. J.H. Congdon	LaCrosse. Mary A. Forbes	Berlin. Mrs Ch. Hitchcock	Plymouth. Prof. F. Graether	Union Center. Mr & Mrs Geo C. Darby	Kilbourn. Prof. & Mrs C.W. Smith	Delton. Evelyn Bassett	Baraboo. Mrs W.F. Kelsey	Beaver Dam. Prof. A.L. Rhodes	Oconomowoc. Dr. Fred C. Rogers	Madison. Prof. R.H. Denniston	Milwaukee. Lillian M. Carter	Milwaukee. E.L. Hauerwas	Milwaukee. Mr & Mrs I.N. Mitchell	Milwaukee. Gertrude Rooney	Milwaukee. Bertha Olmstead	Milwaukee. Mrs J. Pr. Dorothy Brown	Whitewater. Mrs E.L. Shutts	Edgerton. Constance Beckwith	Walworth. L.H. Ripley	Elkhorn. M. Beckwith. S.F. Francis
101 Pea fowl		5-16		4-25 4-25	3-18		2-10			12-16		3-24 5-20		4-18			2-14 4-20	5-10		3-3						5-16 5-1			2-9
104 Sandpiper. bartram												5-12					5-9					5-8								
105 least																	5-6	3-28			5-19	5-7								
106 solitary				5-17					7-20	5-4			5-11									5-8								
107 spotted				5-17		5-26	7-17		6-25	5-4		5-17	5-2		5-28		5-10			5-8			5-11			5-23	5-11		5-1
108 Shrike. loggerhead				Rec	3-26	5-1	5-6		4-3	3-31		4-21	3-26		6-10		3-9					3-25	5-11	5-20		5-25	14-Nov			4-21
109 northern										5-28								4-17												
110 Snipe. Wilson's	5-26		4-5		5-7					3-30		5-28	3-26				4-19			4-21		4-1				6-22	5-7			4-11
111 Sandhill Lake																											2-16		4-15	
112 Sparrow. Chipping		4-12		5-8	5-7	5-4	4-30	3-30	4-23	3-17		4-27	4-22	4-14	4-1	5-12	4-6	3-23			4-8	5-7	4-23		5-12	5-14	3-26	5-2	4-27	3-1
113 clay-colored																											5-28			
114 field	5-26			3-25	5-5		5-18	4-19	7-23				4-22	3-22	4-3		5-12	3-23			5-19	3-27	4-28				3-26		3-21	
115 Fox	5-26	4-27		3-25	3-25	4-14	4-8	3-26	4-26	3-20	4-1	3-31	3-21	4-14	3-27		4-26			3-23	3-16	3-17	3-23			3-27	3-27		3-17	3-21
116 Grasshopper					5-5							5-16											4-28				5-7		5-14	
117 Harris's		5-12		5-12		5-26																								
118 Henslows										5-18																				
119 Lark					5-18	6-16	3-25		7-28	5-5		5-17					5-5 5-21													
120 LeConte's										5-11													6-12							
121 Lincoln's				5-16					6-25				5-12									5-7								
122 Nelson's																													5-8	
123 Savanna							5-6	5-14					3-20									6-17	4-28						4-17	4-28
124 song	5-26	3-25		3-24	3-28	4-10	3-19	3-17	3-24	3-22		3-24	3-16	3-17	3-25	5-14	3-23	3-23	3-20	3-20	3-22	3-17	3-17	5-16	4-6	3-28	3-27	5-2	3-17	3-17
125 swamp				5-13	5-13					3-27	4-27		3-23				5-19					4-18	5-11	5-16	5-3		4-16		4-11	
126 tree		4-15		3-25	3-17	4-14	5-6	1-1	3-24	4-30		3-24	3-21	4-12	3-10		4-6	3-24			3-22	3-17	4-23	5-16		3-27	3-26	5-11	4-27	3-22
127 vesper	5-4			4-8	4-10	4-10	4-9	3-28	4-8	3-26		4-3	3-27	3-22			3-26			3-26	4-14	4-19	5-11	5-6		5-18	3-18		3-19	4-18
128 white-crowned				5-13		5-12	5-16		4-26	4-27			5-13	4-14			5-8				5-28	5-15	5-9	5-7	5-1	5-2	4-16	5-11		5-20
129 white-throated		4-27	4-3	3-19	4-28	4-28	5-4	5-14	4-27	4-20		4-17	4-22	4-14	5-1		4-22	5-8		4-26	4-23	4-26	5-5	5-7	4-28	4-28	4-26	5-2	4-23	4-28
130 Swallow. bank		4-30		5-12	5-12	5-1	6-8		5-10	4-27		5-16	5-10	5-19	5-10		5-13	5-10				5-13					5-7			6-9
131 barn	5—			6-7		6-16	5-4	5-1	5-13	5-11		5-16	4-22	4-12	5-11	4-30	5-6	5-1			4-23	4-22	5-11	5-11	6-2	5-11	4-16	5-11	4-26	5-
132 cliff swallows		5-22				6-26	6-9		3-16	4-27		4-28	5-9				5-15			5-19	5-4	5-4	5-18	5-15		6-27	5-21			
133 martin. purple	5—	4-29			5-10	6-4	5-18	3-24	5-1	4-26	4-17	4-27	3-23	4-7	5-1	4-30	5-21				5-4	5-4	5-11			5-11	5-9	5-14	5-6	4-15
134 rough-winged										5-18			5-9							4-25										
135 tree. or wh. bell	5-30			4-14	5-16	5-13	3-25	3-27	4-26	4-2	4-22	4-25	4-3	5-29	6-2		5-19				4-27	4-18	4-28	5-11	5-16	5-6	5-21	5-14		
136 Swan. white																		3-27												
137 Swift. chimney	5—			4-30	5-12	5-7	5-11	5-9	5-27	5-3		5-6	5-9	4-28	5-18	5-2	5-9	5-13			5-12	5-7	5-9		5-4	5-6	4-9	5-5	5-9	5-8
138 Tanager. scarlet				3-21	5-21	6-1	5-14	5-22	5-20	5-11		5-16	5-13	5-5	5-17	5-25	5-13				5-19	5-18	5-13	5-12	5-28	5-16	5-7	5-16	5-14	5-14
139 Tern. black					5-12			5-16				5-12											5-11			6-23				
140 common							5-18						5-15										3-11							
141 gull-billed																	5-18													
142 Wilson's												5-16														6-23				
143 Thrush. bluebird	5-7		4-6	3-16	3-20	4-9	3-25	3-10	3-24	3-12		3-24	3-26	3-17	3-21	4-3	3-19	3-16	3-16	3-10	3-16	3-17	3-17	—		4-2	2-27	3-17	2-17	3-15
144 gray-cheeked				4-30			5-14		5-6	5-4		5-27	5-13				4-10			4-7	5-30	5-1	5-5	5-18	5-13	5-14	4-23			
145 hermit	5-1		5-4	3-25	4-23	4-28	4-8	4-13	4-6	4-2		4-8	3-21		6-1	5-17	3-24			3-22	4-3	3-27	3-22	5-6	6-8	3-27	3-26		4-11	3-31
146 olive-backed	5-8			5-13	5-12				8-11	5-10			5-11				3-24				5-12	5-15	5-8	5-14	5-25	5-12	4-9			
147 robin	4-30	3-21	3-25	3-16	3-18	3-21	3-16	3-10	3-15	4-5		3-17	3-13	3-10	3-15	3-15	3-17	3-12	3-9	3-10	3-16	3-18	3-16	—	4-9	3-28	2-21	3-12	3-11	3-9
148 Wilson's or veery	5-26	4-27		4-27	5-12	5-7	5-12	5-14	5-16	4-27		5-12	5-12	5-19	6-20		4-26	3-23			5-12	5-17	5-13	5-11	5-18	5-13	4-16			5-10
149 veery				3-19		6-1	5-18		5-15	5-9			5-16	4-22	3-14		5-9			4-10	5-25	5-11	5-13	5-13		5-18	4-16		4-19	4-26
150 Vireo. blue-headed				5-19			5-19						5-12		5-5						5-12		5-18							
151 Philadelphia									5-16	6-1			5-9										5-12				5-14			
152 red-eyed				5-30		6-6		5-26	6-26	5-12		5-21	5-13	4-28	6-5			4-21			5-19	5-17	5-26			5-18	5-21		5-14	5-19
153 warbling				6-11			5-19	5-13	5-13	5-13		6-4	5-19		6-12		6-13				5-30		5-14			6-21	5-26		5-9	
154 white-eyed						5-13	5-13			5-12							6-16	4-21									5-14			
155 yellow-throated				5-13				5-18		5-13		6-9	5-8							5-19							5-21			
156 Warbler. bay-breasted				5-20		5-25	5-19	5-22	5-20	5-27	5-5	5-15	5-13	5-12			5-15				5-26	5-15	5-18	5-18			5-14		5-24	5-19
157 blackburnian					5-25	5-12	5-15	5-19	5-20	5-14		5-12	5-13	5-3	5-12		5-10	5-14		5-19	5-19	5-13	5-8	5-18		5-14	5-7	5-18	5-16	5-14
158 black-poll		5-22		6-3	5-18		5-21	5-22	5-29	5-17		5-16	5-18	5-12	5-13		5-17			5-19	5-30		5-26	5-17			5-14		5-23	5-16
159 black-throated green	5-30			5-12	5-12	5-12	5-5	5-10	5-12	4-5	5-6	5-8	5-8	5-5	5-13		5-15	4-27		5-5	5-12	4-22	5-8	5-6	5-12	5-2	4-16	5-2	5-11	5-8
160 blk-throated blue				5-14			5-14	5-19	5-12	5-15		5-6	5-13		5-11		5-13	5-26		5-12	5-12	5-7	5-12	5-13	5-22	5-16	5-7	5-11	5-13	5-9
161 blk-throated gren				5-15	5-12	5-17	5-11	5-19	5-20	5-3	5-4	5-9	5-8					5-10		5-12		5-7	5-9	5-13		5-18	5-7		5-14	5-14
162 Canadian				5-25	5-30		5-13	5-19	5-30	5-15		5-17	5-15		5-16		5-13	5-15		5-19	5-18	5-15	5-16	5-23		5-19	5-7	5-15	5-26	5-25
163 Cerulean				5-13			5-19		5-30	5-15		5-16	5-12	5-12			5-23				5-25	5-13	5-14	5-23	5-14	5-12	5-7		5-29	5-16
164 Cape May															5-13		5-19	5-26				5-15					5-14			5-27
165 Black-poll. bicol							5-29		5-30				5-21	5-19			5-31					5-17							5-17	
166 chestnut-sided		5-30		5-21		5-22	5-15	5-19	5-20	5-14		5-13	5-13	5-12	5-14		5-13	5-15			5-28	5-13	5-13	5-12	5-25	5-18	4-23		5-14	5-14
167 Connecticut				5-28		6-8		5-26		5-23		5-30					5-27						6-2				5-23			5-25
168 golden-winged												5-16	5-16				5-16				5-25				5-26					6-2
169 Kentucky															5-30															
170 magnolia				5-23		5-12	5-13	5-19	5-18	5-2	5-13	5-23	5-13	5-5	5-2		5-15			5-12	5-12	5-13	5-13	5-13	4-18	5-18	5-7	5-21	5-14	5-14
171 mourning				5-28	5-23		5-13	5-15	5-26	5-23		5-20	5-16					5-5			5-30		5-29	5-27	6-4		5-16		5-28	
172 myrtle. yellow-rump		4-9		5-28	4-10	4-19	4-8	4-20	4-24	4-12	4-18	4-14	4-16	4-26	5-2	5-26	4-18	4-17		4-14	4-23	4-18	4-14		5-1	4-19	4-7	4-20	4-16	3-31
173 Nashville				5-16	5-22		5-15			5-18	5-20	5-14	5-17	5-5			5-19	5-16			5-26		5-12				4-16			5-12
174 oven bird				5-14	5-15	5-15	5-10	5-19	5-18	5-12	5-19	5-17	5-6	5-19	5-12	5-20	5-23	5-13		5-19	5-12	4-22	5-8	5-13	5-12	5-13	5-7	5-15	5-11	5-10
175 palm				5-12	5-12	5-12		5-8	5-15	5-4	5-15	5-10	5-3	5-19	5-17		5-9			5-12	5-12	5-7	5-11			5-11	4-18		5-4	
176 pinus				5-13			5-22	5-19				5-16	5-17				5-31					5-17					5-18			
177 pine						5-23			5-15	5-1				5-5			5-27	5-14		4-25	5-12						4-21			
178 prairie							5-22						5-20				5-31													
179 prothonotary										5-18							5-18					5-17				5-27	5-18			
180 redstart	5-30	5-22		5-12	5-12	5-12	5-13	5-18	5-13	5-12		5-12	5-9	5-12	5-12	4-27	5-13	5-10		5-12	5-12	5-13	5-12	5-12	5-15	5-13	5-7	5-11	5-14	5-13
181 Tennessee							4-19		5-26	5-16							5-27						6-2				5-7		5-19	5-16
182 water thrush. no				5-14	5-7		5-18	5-14	5-20	5-7			5-12	4-28	5-5		5-16			5-19	5-12	5-13	5-14	5-12			5-7		5-14	5-16
183 water thrush. la				5-11		6-1				5-20			4-26				5-23						5-12							
184 Wilson's				5-12	5-12	5-12	5-13	5-19	5-13	5-12	5-8	5-17	5-13	5-12			5-16	5-14		5-19	5-12		5-13	5-13	5-28	5-27	5-21	5-11	5-13	5-16
185 yellow		5-18		5-13	5-12	5-12	5-13	5-12	5-20	5-5		5-16	5-9				5-13	5-15		5-19	5-18	5-15	5-17	5-13	5-30	5-18	5-7	5-9	5-9	5-10
186 yellow-throated vireo		5-12		5-12		5-18	5-14	5-13	5-12	5-9		5-13	5-13	5-19			5-13	5-15			5-12	5-13	5-13	5-12	5-15	5-13	5-30	5-5	5-14	5-15
187 Warbler. Bahamian									4-3	4-4			3-17				3-22													3-15
188 cerul	4-15			4-7		5-28	5-3	5-13	5-7	4-4		5-30		6-23	6-11	5-4	4-3		2-26		5-16	3-26	3-16	—		3-28	Rec.			3-15
189 Wh. throat'd sparrow				6-25	6-5					5-29		5-17		6-23	5-13	4-29	6-7	5-13				5-15					4-23		5-16	
190 Woodcock. American					5-7																		3-31							
191 Woodpecker. downy			3-31	4-30	4-8	3-1	1-1	Rec.	5-1	Rec.	4-1	3-17	Rec.	Rec.	Rec.		3-21		1-19		3-10	3-15	3-1	5-7		6-23	Rec.			Rec.
192 flicker	5-2			3-27	3-25	4-29	3-27	3-25	4-3	3-25	4-26	3-28	3-18	3-22	3-15	4-29	3-22	3-12	3-29		3-16	3-22	3-22	—	5-9	3-26	2-27	3-18	3-21	3-21
193 hairy			3-19	5-11	3-9	3-1	4-11		3-6	Rec.		3-23	Rec.	4-21			3-8				3-10	3-25					Rec.			3-21
194 red headed	5-2	5-30		4-24			5-15	5-1	Rec.	3-20	4-19	3-21	5-9	5-5		4-17	3-8	3-1	5-14	4-6	5-14	5-13	5-13	5-2	5-25	5-44	2-27	5-11	3-27	5-9
195 red bellied										4-13																				
196 sapsucker	5-1		3-26	5-8	5-1	4-19	4-1	4-14	5-17	4-15	4-19	3-27	3-26	4-21	Rec.		3-26	4-17			3-30	4-1	4-4	—	4-18	3-27	2-27		4-3	3-31
197 Wren. Carolina						5-12											5-12													
198 house		5-23	3-28	5-30	5-13	5-22	5-18	5-13	5-17	5-7	5-4	5-7	5-12		5-17	5-7	4-25	5-5			4-23	4-29	5-5	—		4-23	4-16	5-11		4-22
199 western house										5-27																				
200 marsh. long-billed					5-12				5-17	5-18		5-18			5-2						5-30	5-4					4-23			
201 short billed				5-19																										5-19
202 winter							5-18		4-21			4-14	3-16				4-11	5-10		3-22	3-30		3-23							4-29
203 Yellowlegs. greater										4-27			4-29									3-22					4-28			
204 lesser										4-27							5-16													

* Olive warbler. Reported from Baraboo by Mrs W. Kelsey. Been seen some years in succession and by three other reliable observers. Also at LaCrosse.

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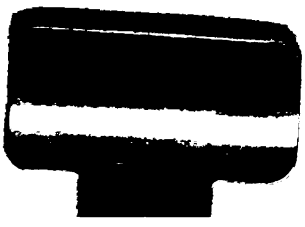
BIRD OBSERVATIONS IN WISCONSIN, 1907.

Compiled by I. N. Mitchell.



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